A REVISION OF THE TRIBUS BLACINI (HYMENOPTERA, BRACONIDAE, HELCONINAE)

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Abstract

The tribus Blacini (Braconidae, Helconinae) is revised with special reference to the non-Palaearctic species. The tribus is almost cosmopolitan and embraces the genera *Blacus* Nees, *Blacozona* gen. nov. from Argentina, from Chile *Stegnocella* gen. nov. and *Apoblacus* gen. nov., and *Artocrus* gen. nov. from Brazil. For the first time a subgeneric division of *Blacus* is given; five new subgenera are proposed. All species of *Blacus* are keyed, 34 new species are described and fully illustrated. The phylogenetic relationships between the subgenera are discussed. A redescription of *Mirax cremastobombyciae* (Fullaway, 1956) comb. nov., is added.

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INTRODUCTION

A critical study of the Blacini was needed for a long time. Up to 1973, it was not possible to identify with certainty even most Palaearctic species. As pointed out by Muesebeck (1951: 109) "the Nearctic representatives of this subfamily [= Blacinae] are mostly undescribed", and there was much to investigate before the taxonomy of this group could be used in an unambiguous way. Without doubt several species still have to be described, especially from the Oriental, Ethiopian and Neotropical regions. In 1900, 22 valid species had been described, in 1970 only five were added, while at present, mainly through the efforts of Haeselbarth, 59 valid species are known. The present paper brings the total number of *Blacus* species to 93.

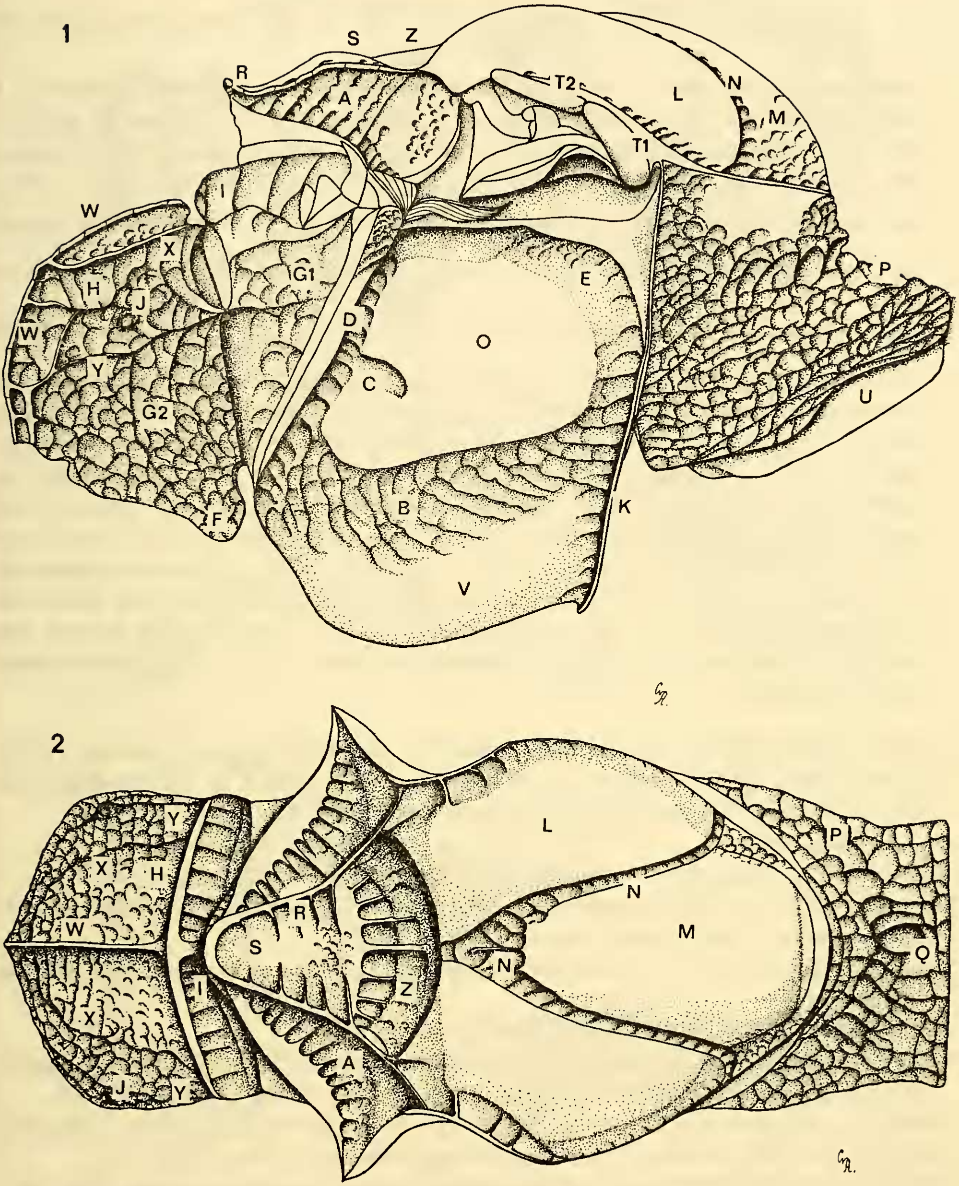
The present revision of the tribus started as a revision of *Hysterobolus* Viereck, which proved to be at the most a subgenus of *Blacus* Nees. Subsequently the scope was widened, ultimately embracing the whole genus. The need for a revision of the Palaearctic species was large, but after the excellent revision by Haeselbarth (1973a), I could concentrate mainly on the species from other regions. Because the specimens are small and the differences tend to be minute, the descriptions have to be furnished with many figures. Therefore, I decided to illustrate all species treated here in a comparable way. Because of the differences in the way the specimens had been mounted I was often forced to prepare my figures under different angles. Especially when comparing the frontal aspects of the head, the student has to be aware of possible artificial differences as a result of this.

No keys are given for the males because of the lack of reared series of *Blacus* outside the Palaearctic region. They are often difficult to assign to the right females, especially in the subgenera *Blacus* and *Hysterobolus*. Through comparison with the figures given and keeping in mind that males have larger eyes, a shorter malar space and the first metasomal tergite more slender, it will be possible to identify the males at least up to the species-group. Because Shenefelt (1969) gives an excellent list of pertinent literature, only the original publications, Shenefelt's catalogue and the literature published after 1969 are cited.

According to Čapek's research I consider the Blacini a divergent tribe of the Helconinae. Although Tobias (1965: 859) recognized the generalized structure of the genitalia in *Blacus*, he placed it together with such highly specialized genera as *Pygostolus*, *Allurus* and *Centistes* (which may form a separate tribus Centistini, in the Perilitinae (= Euphorinae auct. p.p.)). The probably convergent reduction of the wing venation and some uncertain data about the biology of *Blacus* are insufficient. It also is unlikely that *Blacus* would be a parasite of mature Coleoptera, because of its fragile ovipositor. The cephalic structures of the final instar larvae are different from the Euphorinae as pointed out by Čapek (1973: 261). The Blacini have distinct teeth on their mandibles, while the Euphorinae possess smooth, toothless mandibles.

TERMINOLOGY

Richards (1956) is largely followed; for the wing venation, I have used the Jurinean system (Fig. 15, 16) after Fischer (1972: 40) and Marsh (1962: 523; 1971: 843) but with some additions. For the other terms used see Fig. 1—9 and 12—19, to which the following explanation may be added.



Figs. 1—2, mesosoma of *Blacus* (*Ganychorus*) *pallipes* Haliday, ♀, Netherlands, Wijster, 5—8.vii. 1974, legs and wings removed. 1, lateral aspect; 2, dorsal aspect. *A* = side of scutellum or axilla; *B* = precoxal suture; *C* = episternal scrobe; *D* = pleural suture; *E* = epicnemial suture; *F* = metapleural flange; *G1* = anterior part of metapleuron; *G2* = posterior part of metapleuron; *H* = propodeum; *I* = metanotum; *J* = propodeal spiracle; *K* = prepectal carina; *L* = lateral lobe of mesoscutum; *M* = middle lobe of mesoscutum; *N* = notauli; *O* = mesopleuron; *P* = pronotum; *Q* = pronope; *R* = lateral carina of scutellum; *S* = scutellum; *T1* + *T2* = tegulae; *U* = prosternum; *V* = mesosternum; *W* = medial carina of propodeum; *X* = lateral carina of propodeum; *Y* = pleural carina; *Z* = scutellar suture. 75 ×

A.C.I.: Apomorphous Character Index; $\dfrac{\sum\limits_{x=1}^{n} a \times 100}{n}$ in which "*n*" is the number of characters used, while *a* is a value for the presence of an apomorphous character in a group, as given for the Blacini in Table 2. Always present (+) is given the value 1, both apomorphous and plesiomorphous conditions occurring frequently (±) counts for 1/2, when the apomorphous condition is absent (—), it has the value o. Intermediary conditions between the first and the second $\left(\overset{+}{(-)}\right)$ and between the second and last mentioned $\left(\overset{(+)}{-}\right)$ count for 3/4 and 1/4, respectively. For instance, in *Tarpheion, a* totals up to 7.25, thus its A.C.I. is $\dfrac{7.25 \times 100}{26} = 27.8$. The maximum value is computed by taking all apomorphous characters (except for the ones in brackets) and neglecting the possible plesiomorphous conditions in the group. For instance, *Tarpheion* theoretically may have species with 9 apomorphous characters, and its A.C.I.$_{max}$ is $900 : 26 = 34.6$. The reverse is the A.C.I.$_{min}$, with only the apomorphous characters counted of which no plesiomorphous condition occurs in the group (those in brackets excluded). The A.C.I.$_{min}$ of *Tarpheion* is $500 : 26 = 19.2$ (only 5 of such apomorphous characters are present). When a group is represented by one species, only one A.C.I. is possible. Theoretically one species may have such an extraordinary variation that more than one value is possible, but I have not encountered such species. The values computed are given in Fig. 20. See also remarks under phylogeny (p. 167).

Diplope: distinct laterope and dorsope at about the same height (Van Achterberg, 1974).

Dorsope: antero-dorsal depression of 1st metasomal tergite, more or less pit-shaped, in *Blacus* between dorsal carina and dorso-lateral carina (Fig. 8).

Eye: compound eye.

Frontal suture: usually shallow suture in front of anterior ocellus (Fig. 3, 4).

Glymma: linear depression between dorso-lateral carina and ventro-lateral carina (Fig. 8).

Height: maximum height unless otherwise stated.

Inclivous: transverse vein of which the anterior end is nearer to the wing base than its posterior end.

ITL: distance between both anterior tentorial pits (Fig. 9).

Laterope: antero-basal depression of 1st metasomal tergite, more or less pit-shaped, between dorso-lateral and ventro-lateral carina, situated in the glymma (Fig. 8).

Length of 3rd antennal segment: for convenience the length of the annellus is included.

Length of fore wing: measured from apex of tegulae to apex of wing (Fig. 15).

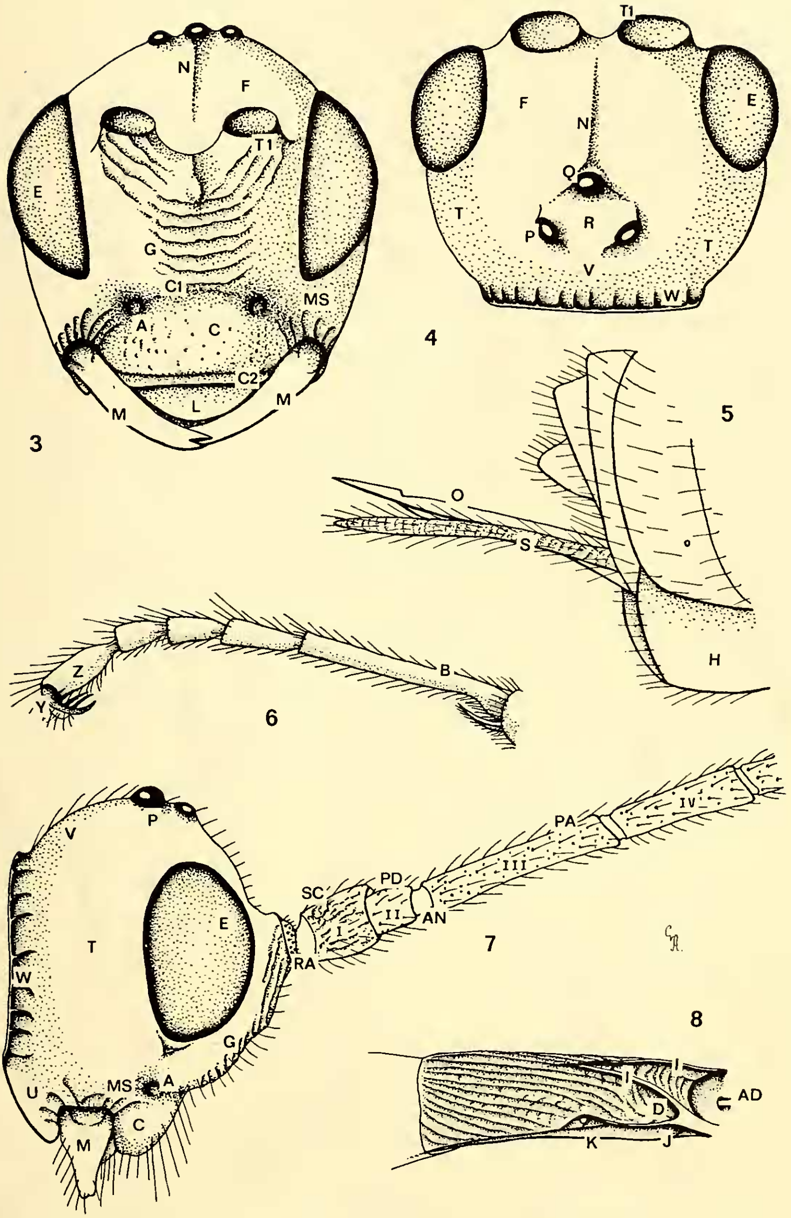
Length of 1st metasomal tergite: measured from anterior muscle to its apex (Fig. 14).

Length of ovipositor sheath: linear length of visible part (Fig. 17).

Malar suture: suture (usually shallow) between under edge of eye and base of mandible (Fig. 26).

Mesosoma: thorax of most authors, but in the Apocrita it also comprises the addition of the 1st abdominal segment or propodeum (or epinotum in Formicidae) to the thorax. Following Michener (1944), the part of the body between the 1st and 2nd strong constriction is called mesosoma.

Metasoma: Following Michener (1944), it is defined as the part of the body after



Figs. 3—8, *Blacus* (*Ganychorus*) *pallipes* Haliday, same specimen as in Fig. 1. 3, frontal aspect of head; 4, dorsal aspect of head; 5, apex of metasoma, lateral aspect; 6, fore tarsus, lateral aspect; 7, lateral aspect of head; 8, 1st metasomal tergiet, dorso-lateral aspect. *A* = anterior tentorial pit; *B* = basitarsus; *C* = clypeus; *C1* = hypostomal suture; *C2* = clypeal margin; *D* = dorsope; *E* = eye; *F* = frons; *G* = face; *H* = hypopygium; *I* = dorsal carinae; *J* = laterope; *K* = glymma; *L* = labrum; *M* = mandible; *N* = frontal suture; *O* = ovipositor; *P* = posterior ocellus; *Q* = anterior ocellus; *R* = stemmaticum; *S* = ovipositor sheath; *T* = temple; *T1* = antennal socket; *U* = occipital flange; *V* = vertex; W = occipital carina; *X* = spiracle of 1st metasomal tergite; *Y* = claw; *Z* = telotarsus; *AD* = anterior muscle or adductor of 1st metasomal tergite; *AN* = annellus; *MS* = malar space; *PA* = postannellus or 3rd antennal segment; *PD* = pedicellus or 2nd antennal segment; *RA* = radix; *SC* = scapus or 1st antennal segment. 64 ×

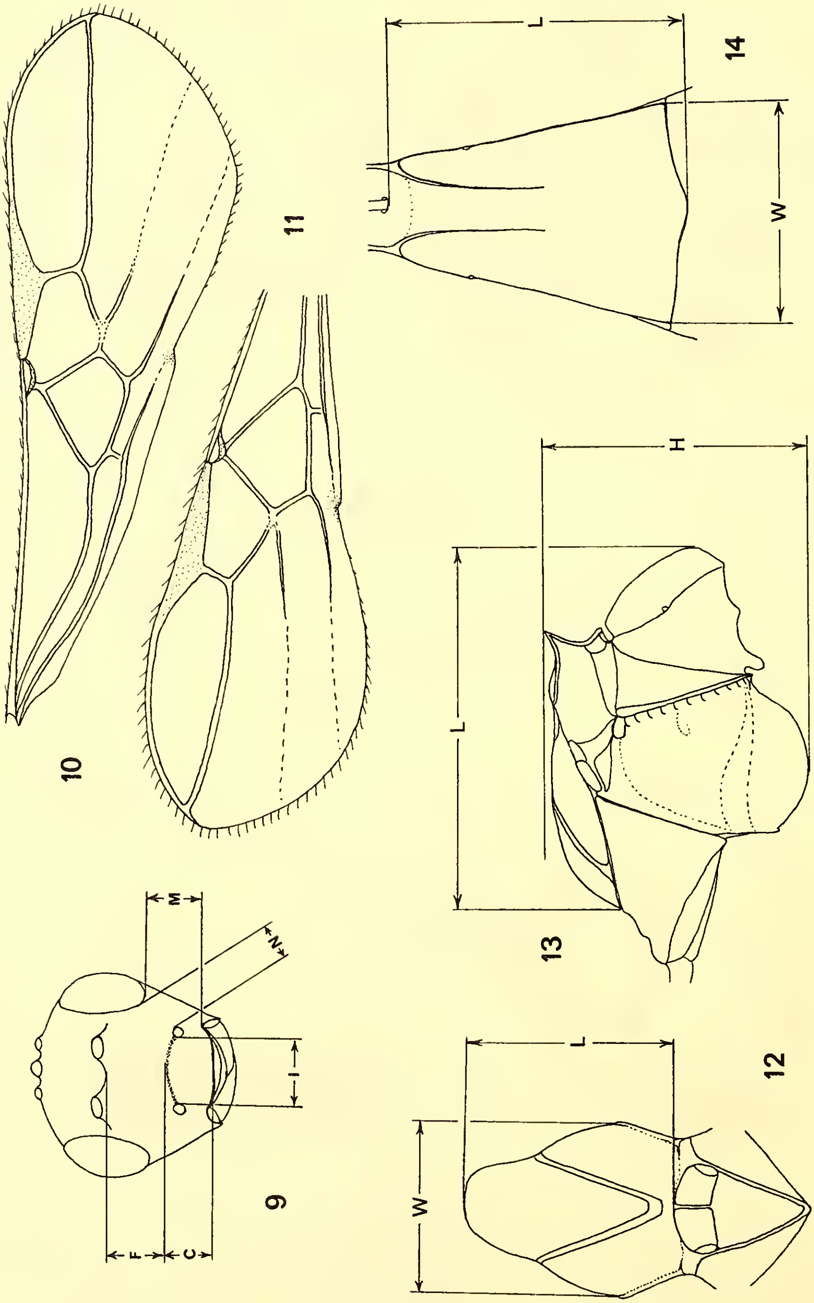
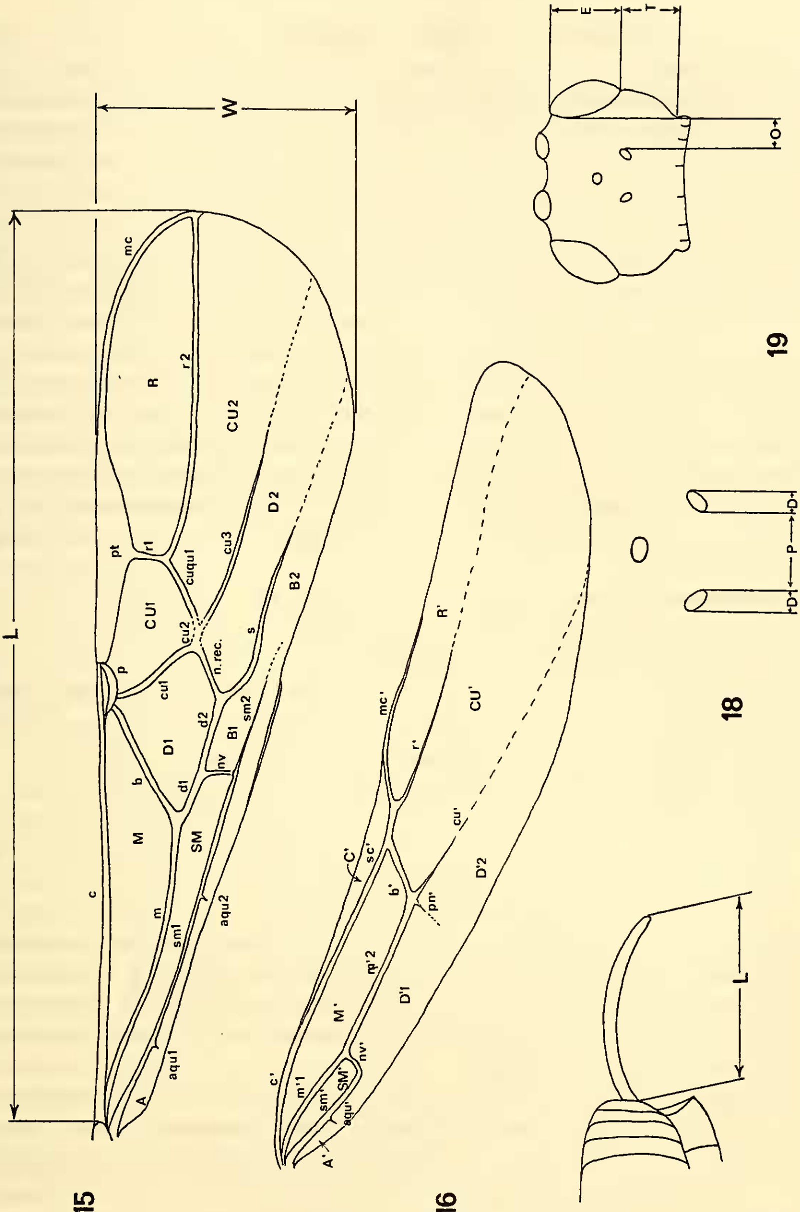


Fig. 9—19. 9, frontal aspect of head; 10, right fore wing of *Blacus* (*Ganychorus*) *genalis* Haeselbarth, ♀, v.8055, Stam Coll.; 11, left fore wing of same specimen; 12, mesonotum, dorsal aspect; 13, mesosoma, lateral aspect; 14, 1st metasomal tergite, dorsal aspect; 15, fore wing; 16; hind wing; 17, apex of metasoma, lateral aspect; 18, stemmaticum; 19, dorsal aspect of head. *E* = dorsal length of eye; *T* = dorsal length of temple; *F* = length of face; *CL* = length of clypeus; *D* = diameter of posterior ocellus; *H* = height; *I* = inter-tentorial line; *L* = length; *MS* = malar space; *N* = tentorio-ocular line; *O* = ocular-ocellar line; *P* = postocellar line. Fore wing, veins: *aqu 1*, *aqu 2* = 1st and 2nd transverse anal vein; *b* = basalis; *c* = costa + subcosta; *cu1*, *cu2*, *cu3* =



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1st, 2nd and 3rd abscissa of cubitus; *cuqu1* = 1st transverse cubital vein; *d1*, *d2* = 1st and 2nd abscissa of discoideus; *m* = media; *mc* = metacarp; *nv* = nervulus; *n. rec.* = nervus recurrens; *p* = parastigma; *pt* = pterostigma; *r1*, *r2* = 1st and 2nd abscissa of radius; *s* = subdiscoideus; *sm1*, *sm2* = 1st and 2nd abscissa of submedius. Cells of fore wing: *A* = anal cell; *B1* = 1st brachial cell; *B2* = 2nd brachial cell; *CU1* = 1st cubital cell; *CU2* = 2nd cubital cell; *D1* = 1st discoidal cell; *D2* = 2nd discoidal cell; *M* = medial cell; *R* = radial cell; *SM* = submedial cell. Hind wing, veins: *b'* = basella; *c'* = costella; *cu'* = cubitella; *m'1*, *m'2* = 1st and 2nd abscissa of mediella; *mc'* = metacarpella; *nv'* = nervellus; *pn'* = postnervellus; *r'* = radiella; *sc'* = subcostella; *sm'* = submediella; *aqu'* = transverse anallan vein. Cells of hind wing: *A'* = anallan cell; *C'* = costallan cell; *CU'* = cubitellan cell; *D'1* = 1st discoidellan cell; *D'2* = 2nd discoidellan cell; *M'* = mediellan cell; *R'* = radiellan cell; *SM'* = submediellan cell the 2nd strong constriction, usually called the abdomen or gaster. Its anterior segments may form a petiolus or petiolar segment (or scales in the Formicidae). Richards (1956: 39) proposes the term "gaster"; another possibility is to count the real abdominal segments. The physical 1st segment of the metasoma has to be called the 2nd tergite; for practical reasons and for uniformity this possibility is abandonned. Unfortunately the term gaster is differently applied, e.g. Nixon (1942: 184) and Graham (1969: 11) use it for the 3rd-9th abdominal segments. This may be correct in respect to its meaning, gaster being Greek for stomach or belly; the whole 2nd abdominal tergite (or 1st metasomal) is called "(gastral) petiole". More common is its use for the 2nd-9th abdominal tergites as proposed by Richards, e.g. Griffiths (1964: 830) and Eady (1969: 165). The use of the term abdomen for the real 2nd-9th tergites is confusing, e.g. Nixon (1938: 415; 1943: 259), Papp (1965: 181), Starý (1966: 22), Fischer (e.g. 1970: 254) and Haeselbarth (1973a: 72); a well-defined term, such as metasoma is preferable. To make it even more confusing, in the Myrmicinae the gaster comprises the 4th-9th abdominal segments. It is clear that gaster and abdomen are used in a functional way and not in a correct, homologous way. So I prefer as univalent name for the 2nd-9th abdominal segments, the term metasoma as defined above.

OOL: distance between posterior ocellus and eye (Fig. 19).

Pronope: name proposed for the medio-dorsal pit of pronotum (Fig. 2).

POL: distance between both posterior ocelli (Fig. 18).

Reclivous: transverse vein of which the anterior end is farther from the wing base than its posterior end.

TOL: distance between anterior antennal pits and eye (Fig. 9).

Width: maximum width, unless otherwise stated.

Ø: diameter.

DISTRIBUTION

As shown in Table 1, the Blacini are almost cosmopolitan; only from the Australian and Pacific regions I could not examine any specimens. The genus *Blacus* is known from the Holarctic region for a long time, but the first species from the Ethiopian region was only described in 1949, while from the Neotropical and Oriental regions they are described for the first time in this paper.

Some subgenera of *Blacus* have an almost completely Holarctic distribution (viz., *Neoblacus, Blacus, Hysterobolus* and *Leioblacus*); some are very wide-spread (*Ganychorus* and *Tarpheion*) and others occur in one region only (*Mesoxiphium* and *Contochorus*).

Table 1. Numbers of species per region for the different genera in the Blacini

Genus Region	*Blacus*	*Blacozona*	*Artocrus*	*Stegnocella*	*Apoblacus*
Palaearctic	37	—	—	—	—
Nearctic	19	—	—	—	—
Holarctic	10	—	—	—	—
Neotropical	8	1	1	1	1
New World	1	—	—	—	—
Ethiopian	16	—	—	—	—
Oriental	2	—	—	—	—

Fossil species

The examined fossil species will be treated in a second paper. Brues placed five species in *Blacus* and two in *Neoblacus*, but at least partially they belong to the Brachistini.

Phylogeny

In constructing the classification for the Blacini I have tried to follow the principles of phylogenetic systematics as defined by Hennig (1966). The terms apomorphous and plesiomorphous are used to indicate the degree of divergence of (in this case morphological) characters from an ancestral state in respect to each other.

The Apomorphous Character Index is tentatively used to indicate the divergence from the ancestral state in a numerical taxonomic way. Such characters cannot simply be added up, but for an indication of the divergence of a group as a whole and its variation, it can be a useful tool. It is used in the same way in some papers in phylogenetic systematics in which mention is made of apomorphous and plesiomorphous groups rather than of apomorphous and plesiomorphous character states. The selection of the characters may be a subjective factor, which can be diminished by taking a large number of characters.

I consider the tribus Blacini to be a monophyletic group which possesses the following apomorphous characters: 1 — absence of cuqu 1; 2 — absence of aqu 1 + 2, or faint remnants visible at the most (e.g. Fig. 24); 3 — 1st discoidal cell sessile, seldom (sub)petiolate; 4 — brachial cell open, only closed in *Blacozona* and *Stegnocella*; 5 — subbasal dorsope; 6 — dorsal surface of propodeum as long as apical surface or longer. The synapomorphous characters 1—3 it shares with its sister-group Brachistini. Of these the tribus Blacini possesses the most apomorphous characters. The most important characters of the (sub-)genera are given in a note at the end of the description. The genera *Blacozona* from Argentina and *Stegnocella* from Chile form the less derived group and may have a great resemblance to the stem-species of the subtribus. Later Neotropical descendants are the genera *Apoblacus* and *Artocrus*, and the subgenera *Leioblacus* and *Mesoxiphium*.

Judging from the shape and carination of the propodeum, *Mesoxiphium*, *Leioblacus*, *Ischnotron* and *Tarpheion* are a less derived group than the related subgenera *Contochorus*, *Ganychorus* and *Hysterobolus* (Fig. 21). As to the other characters there may be a different situation, as illustrated by the A.C.I. given in Fig. 20. A large subgenus as *Ganychorus* is variable and may embrace species with few apomorphous characters (comparable with the less derived groups) and with many apomorphous characters, approaching a derived subgenus as *Contochorus*.

Interesting is the convergent development in the *Blacus*-line (*Blacus* + *Neoblacus*) and in the *Ganychorus*-line (*Ganychorus* + *Hysterobolus*). Both have the medial area of the posterior surface of the propodeum indistinct or absent; only in *Ganychorus* it may seldom occur, indicating the relationship with *Tarpheion*: a group evolved primarily in the Southern Hemisphere. This situation is reached in different ways: in the *Ganychorus*-line by uniting the branches of the medial area, usually resulting in a distinct medial carina which is sometimes secondarily indistinct by surrounding sculpture. In the *Blacus*-line both branches are less developed and not well visible by the reticulation of the posterior surface of the propodeum. *Ganychorus* probably evolved primarily in the Southern Hemisphere and *Blacus* evolved in the Northern Hemisphere. *Hysterobolus*

Table 2. Presence or absence of apomorphous characters in genera and subgenera of the Blacini. (For discussion, see p. 162).

Apomorphous state of character (= +)	Blacozona	Stegnocella	Mesoxiphium	Leioblacus	Ischnotron	Tarpheion	Contochorus	Ganychorus	Hysterobolus	Artocrus	Blacus	Apoblacus	Neoblacus	Plesiomorphous state of character (= —)
cu 1 from parastigma	+	+	+	+	+	+	+	±	+	—	+	—	+	cu 1 from basalis
ovipositor short	+	—	—	±	+	+	+	+	+	+	±	+	+	ovipositor long
lateral carina of scutellum complete	—	—	—	+	+	+ (—)	+	+	+	—	(+) —	—	(+) —	lateral carina of scutellum incomplete or absent
antennal segments of ♀ 18 or less	—	—	+	+	+	(+) —	+	±	±	—	+	?	+	antennal segments of ♀ more than 18
2nd tergite of metasoma smooth	+	—	+	+	±	(+) —	+	+ (—)	+	+	+ (—)	+	—	2nd tergite sculptured
malar suture absent	—	+	+	+	—	—	—	±	±	+	±	+	+	malar suture present
r 1 longer than width of pterostigma	—	—	—	+	—	±	+	±	±	—	±	—	—	r 1 shorter than width of pterostigma
subdiscoideus almost straight	—	—	—	±	±	—	+	+ (—)	—	—	±	—	+	subdiscoideus distinctly bent
medial carina of propodeum undivided	—	+	—	—	—	—	—	±	+	+	+ (—)	+	+	medial carina of propodeum divided
scutellum sculptured	—	—	—	—	—	±	—	±	+	—	±	—	+	scutellum smooth
fore claw of ♀ with blackish bristles	—	—	—	—	—	±	+	+	+ (—)	+	—	+	—	fore claw of ♀ simple, without bristles

middle claw of ♀ with blackish bristles	—	—	—	—	—	—	+	±	—	+	—	+	—	middle claw of ♀ simple
propodeal tubercles present	+	—	—	—	—	—	—	±	+	—	±	+	+	propodeal tubercles absent
notauli absent dorsally	—	—	—	±	±	—	—	—	—	—	±	+	±	notauli complete
eyes setose	—	—	—	—	—	—	+	±	+	—	(+) —	—	—	eyes bare
parastigma enlarged in respect to c + sc	—	—	—	—	—	—	—	±	—	—	±	—	—	parastigma in respect to c + sc medium-sized
metasoma strongly compressed	—	—	—	+	+	—	+	—	—	—	—	—	—	metasoma at least in anterior half depressed
ovipositor bent ventrad	—	—	—	—	±	+	—	—	—	—	±	—	—	ovipositor straight
hypopygium relatively large	+	+	—	—	—	+	—	—	—	—	(+) —	—	—	hypopygium small to medium-sized
metapleural flange absent	—	—	+	+	—	—	—	—	—	—	—	—	—	metapleural flange present
dorsal surface of propodeum much longer than its posterior surface	—	+	—	—	—	—	+	—	—	+	—	+	—	dorsal surface of propodeum almost equal to posterior surface
nervellus absent	—	—	—	±	—	—	—	—	—	—	—	—	—	nervellus present
scutellar suture smooth	—	—	—	+	—	—	—	—	—	—	—	—	—	scutellar suture crenulate
scutellum with spine	—	—	—	—	—	—	—	—	—	+	—	—	—	scutellum without spine
cu 1 + 2 absent	—	—	—	—	—	—	—	—	—	—	—	—	+	cu 1 + 2 present
occipital carina reduced	—	—	—	—	+	±	—	—	—	—	—	—	—	occipital carina complete

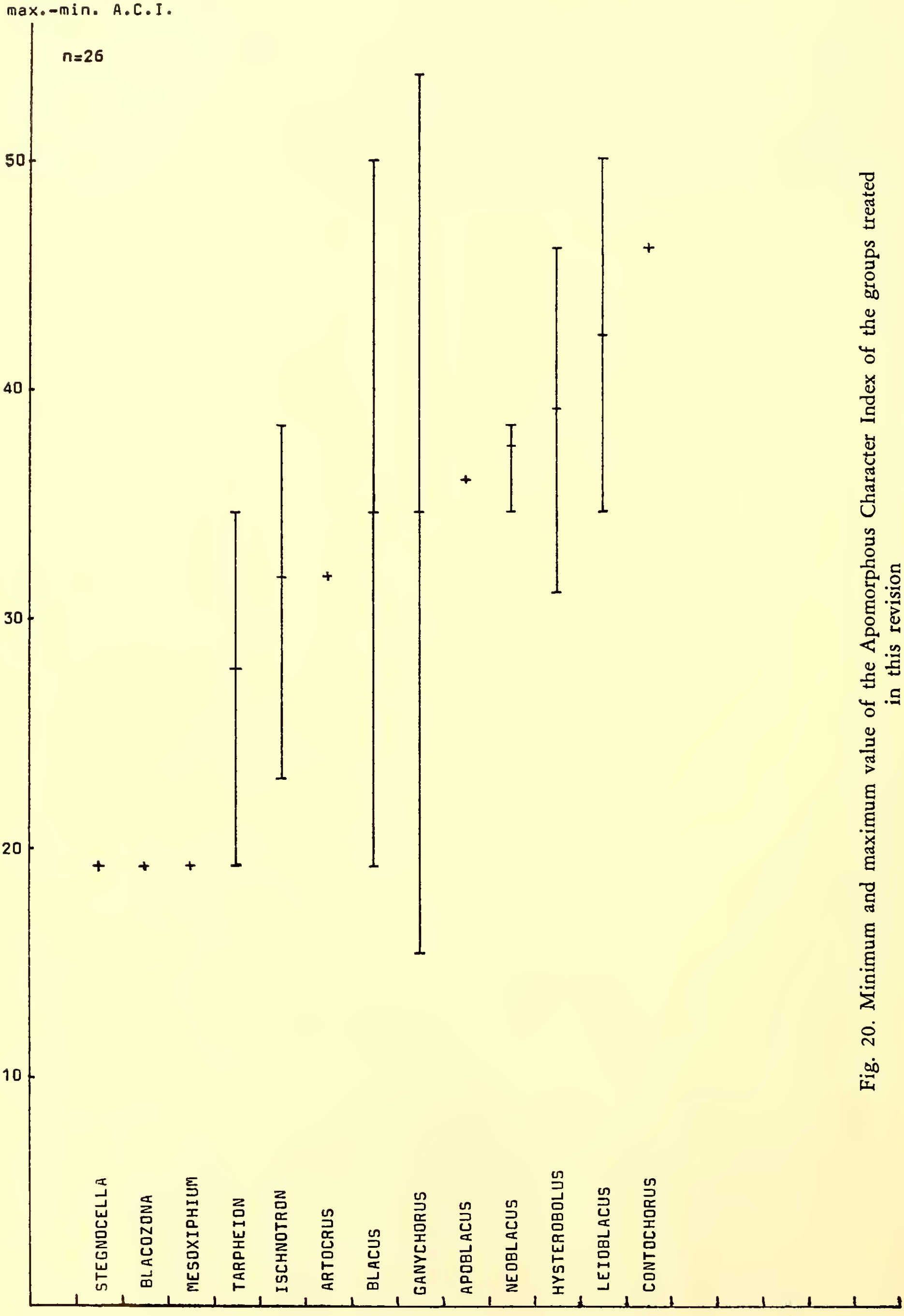

Fig. 20

Fig. 20. Minimum and maximum value of the Apomorphous Character Index of the groups treated in this revision

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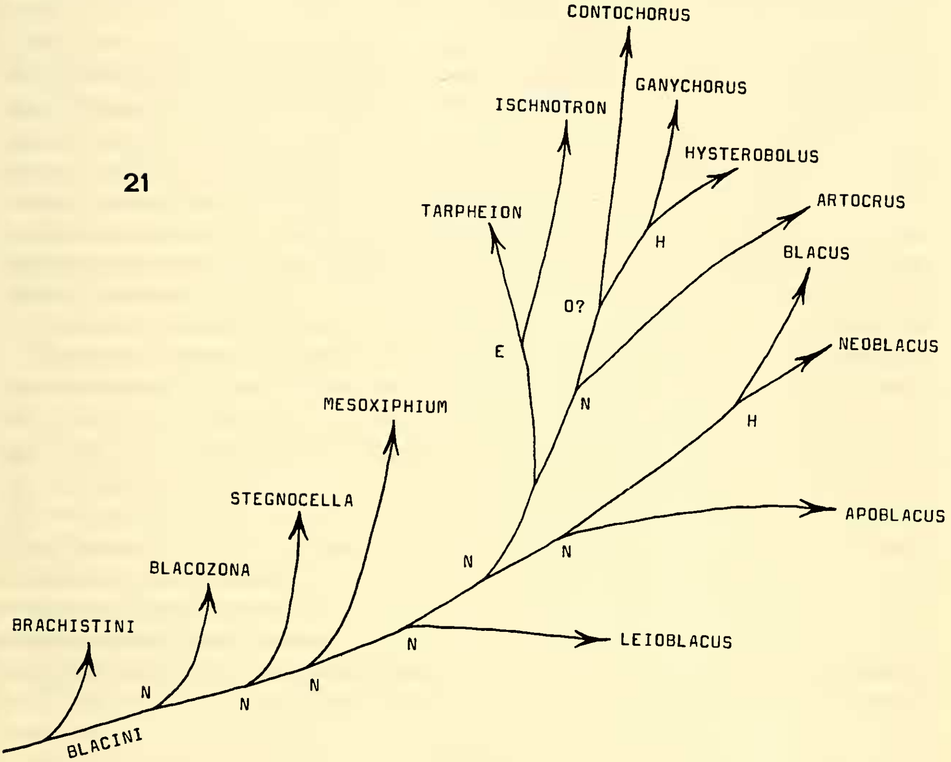

Fig. 21. Dendrogram of possible relationship in the Blacini. The zoogeographic regions in which the primary radiation may have taken place are indicated by the following abbreviations: *H* = Holarctic; *N* = Neotropical; *E* = Ethiopian; *O* = Oriental. The Australian region is excluded, its fauna being too imperfectly known

(from *Ganychorus*) and *Neoblacus* (from *Blacus*) evolved secondarily in the Holarctic region.

Where a primary radiation may have taken place can be deduced from the occurrence of related groups and their variation, their present distributions, and the kind of variability in other regions, if other regions are occupied. Because of insufficient collecting in the tropics only provisional conclusions can be drawn. As stated above, the primary evolution of *Ganychorus* most likely took place in the Neotropical region. A secondary fast evolution or radiation has taken place in the Palaearctic region; mainly in the *diversicornis*-group of *Blacus* (*Ganychorus*) (*maculipes* Wesmael, *ambulans* Haliday, *koenigsmanni* Haeselbarth and *kaszabi* Haeselbarth) and in the *ruficornis*-group (*nitidus* Haeselbarth, *conformis* Wesmael, *pectinatus* Haeselbarth, *capeki* Haeselbarth and *apaches* spec. nov.). *B.*(*G.*) *ruficornis* (Nees) is a Holarctic species; in the Nearctic region I could not detect such a secondary radiation, only *ruficornis* is somewhat more polymorphous than in the Palaearctic region. In the Ethiopian region both groups are represented by closely related species, viz., *haeselbarthi* spec. nov. and *dracomontanus* Haeselbarth, respectively, which seem to have derived from the large Palaearctic radiation.

Independently, micropterous forms have evolved in the *Ganychorus*-line and in the *Blacus*-line. The micropterous forms have a neotenic development of one character, the wings; this phenomenon is called paedomorphosis retardation by Hennig (1966: Fig. 67).

The relative positions of *Neoblacus*, *Contochorus*, etc. as subgenera are at first sight rather subjective, but I have tried to split a group only if distinct combinations of apomorphous characters are present. If this is not the case, or the combination is rather diffuse in respect to other groups, at most subgeneric rank is given. Also it is too simple to split a group on the presence or the absence of one particular character only, e.g. the absence of cu 1 in *Neoblacus*. A combination of several apomorphous characters is needed in constructing a satisfactory taxonomic system. Often one out of a certain number of apomorphous characters occurs not in the apomorphous state; but by the presence of the majority of the others such species can be placed satisfactorily.

BIOLOGY

Hosts of Blacini are almost unknown, except for some Palaearctic species (Haeselbarth, 1973a: 78). As Čapek (1970: 853) stated for the whole subfamily Helconinae, the records indicate that most species are endoparasites of larvae of Coleoptera. Some host-beetles live in mushrooms (viz., of *Blacus* (*Ischnotron*) *gracilis* Haeselbarth, of *B.* (*Blacus*) *hastatus* Haliday (probably on beetle larvae infesting tree-mushrooms such as *Polyporus*), of *B.* (*B.*) *humilis* (Nees) (on *Cryptophagus lycoperdi* Hbst., but also bred from *Myelophilus piniperda* L. and, probably, from *Stegobium paniceum* L.)).

Some other host beetles live in or under bark (viz., of *B.* (*B*) *humilis*, of *B.* (*B.*) *longipennis* (Gravenhorst) (from *Anobium* species), of *B.* (*B.*) *exilis* (Nees) (from *Ips vorontzowi* Jacobs and from *Magdalis armigera* Geoffr.), of *B.* (*Neoblacus*) *koenigi* Fischer (from *Scolytus koenigi* Sam.) and of *B.* (*B.*) *errans* (Nees) (from a *Dasytes* species).

Some species seem to parasitize small Staphylinidae: *B.* (*Ganychorus*) *ruficornis* (Nees) (reared from *Tachyporus obtusus* L.) and *B.* (*Blacus*) *exilis* (a large series was found together with many Staphylinidae in a mouldy grass heap). Some species were reared from nests of shrews (*B.* (*Ganychorus*) *armatulus* Ruthe) or bumble-bees (*B.*

(*Blacus*) *paganus* Haliday, *B.* (*B.*) *maryi* f. *nidicola* Hedqvist and *B.* (*B.*) *masoni* spec. nov. These may be places for hibernation, but they may as well parasitize small Coleoptera infesting such nests, e.g. *B.* (*B.*) *paganus* (Haliday) is reported as a parasite of *Antherophagus* spec. (Cryptophagidae) in surface and underground nests of bumblebees (Alvord, 1975: 134), while *B.* (*B.*) *filicornis* Haeselbarth was bred from a bird's nest.

But there are several other hosts: *B.* (*Blacus*) *nigricornis* Haeselbarth is a parasite of *Meligethes* species, *B.* (*B.*) *instabilis* Ruthe is frequently found in buildings, especially where food is present (possible hosts are several small Coleoptera, e.g. *Stegobium paniceum*, *Cryptophagus* and *Carpophilus* species, Ptinidae and Staphylinidae). Other species may be parasites of larvae of small Diptera and Coleoptera living in plant tissue. This may represent a secondary development in the Helconinae; it occurs in *B.* (*Blacus*) *interstitialis* Ruthe (from *Oscinella frit* (Chloropidae)) and in *B.* (*B.*) *exilis* (from *Contarinia medicaginis* K. (Cecidomyidae)). The only host record from the Nearctic region (a male of *B.* (*Ganychorus*) *ruficornis* ex *Coleophora laricella* (Hbn.) (Lepidoptera, Coleophoridae) is almost certainly erratic.

The wide spectrum of hosts in some species may explain the large variation in these species and some others as *B.* (*Blacus*) *exilis*, *B.* (*B.*) *humilis* and *B.* (*Ganychorus*) *ruficornis.* Many species seem to be univoltine in the Holarctic region, exceptions may be *B.* (*B.*) *diversicornis* (Nees), *B.* (*B.*) *humilis*, *B.* (*B.*) *exilis* and *B.* (*B.*) *instabilis.* The hibernation of the ♀ is known (or likely) in *B.* (*Ganychorus*) *pallipes* Haliday, *B.* (*G.*) *tripudians* Haliday, *B.* (*G.*) *ruficornis*, *B.* (*G.*) *ambulans* Haliday, *B.* (*G.*) *maculipes* Wesmael, *B.* (*G.*) *diversicornis, B.* (*G.*) *striatus* spec. nov., *B.* (*G.*) *armatulus, B.* (*Hysterobolus*) *mamillanus* Ruthe, *B.* (*Blacus*) *instabilis, B.* (*B.*) *filicornis,* and *B.* (*B.*) *exilis.*

Very peculiar for Hymenoptera is the forming of swarms by males of *B.* (*Ganychorus*) *ruficornis*, *B.* (*G.*) *tripudians*, *B.* (*G.*) *maculipes*, *B.* (*G.*) *nigricornis* and in the *B.* (*Blacus*) *exilis*-group, as pointed out by Haeselbarth (1973a: 77—78). This behaviour can be explained by the, in Helconinae more observed, individual dancing of the males in the neighbourhood of emerging females, combined with a high density of the species. When a female approaches the dancing males, some males leave the group and try to copulate with her. The enlargement of the parastigma of the male in some species seems to be related to the dancing behaviour of these species.

Key to the tribus of Helconinae

1. Metasoma inserted dorsally on propodeum, far above hind coxae . . Cenocoeliini
— Metasoma inserted ventrally, between hind coxae 2
2. cuqu 2 present; frons more or less excavated behind antennal sockets . . Helconini
— cuqu 2 absent; frons slightly or not excavated, often weakly convex 3
3. Dorsope of 1st metasomal tergite absent, if present then narrow and shallow, situated near spiracles; 1st brachial cell almost always closed at apex; usually larger species with antennal segments of ♀ usually more than 22 . . . . Brachistini
— Dorsope of 1st tergite distinct, usually large and deep, situated basally from the spiracles; 1st brachial cell open at apex, only in the new genera *Blacozona* and *Stegnocella* closed; usually small species with antennal segments in ♀ 15—21, seldom more . . . . Blacini

Tribus **Blacini**

Diagnosis. — Length of body 1.3—4.5, length of fore wing 1.5—4.5 mm; antennal segments of ♀ 14—32, usually 17—21; palpi medium-sized, slender (but wide in *Apoblacus*), maxillary palpus usually about as long as height of head, with 6 segments, labial palpus about half length of maxillary palpus, with 3 segments; face and clypeus usually distinctly convex; margin of clypeus usually straight medially, seldom somewhat concave; anterior tentorial pits distinct, deep, medium-sized; usually occipital carina complete but in *Ischnotron* absent and in *Tarpheion* sometimes absent dorsally; lateral carina of scutellum present or absent, sometimes protruding apically, only in *Artocrus* with distinct spine; prepectal carina complete; precoxal suture usually present; metapleural flange present, except in *Leioblacus* and *Mesoxiphium*; length of dorsal surface of propodeum about equal to length of its posterior surface except in *Contochorus, Stegnocella, Apoblacus,* and *Artocrus,* in which the dorsal surface is distinctly longer, and in *Blacozona* where the dorsal surface is somewhat longer than the posterior surface; notauli usually present; d 1 : d 2 = 1 : 0.7—15.0; 1st brachial cell open apically, except in *Blacozona* and *Stegnocella*; only remnants of aqu 1 + 2 present or completely absent; length of hind femur 3.5—8.0 times its width; claws of ♀ simple, but with blackish bristles in *Ganychorus, Artocrus, Hysterobolus* and some species of *Tarpheion*; claws of ♂ always simple; dorsope of 1st metasomal tergite usually large and deep[1]), in front of spiracles; laterope medium-sized or small and shallow; length of ovipositor sheath 0.07—0.88 times fore wing, usually 0.14—0.46 times, seldon longer or shorter.

Key to the genera and subgenera of the Blacini

1. First brachial cell closed at apex (Fig. 24, 464); claws of ♀ simple; antennal segments of ♀ 32 (Fig. 29, 461) 2

— First brachial cell open at apex (Fig. 74), sometimes narrowly (Fig. 33); claws of ♀ variable; antennal segments of ♀ 14—27 3

2. Metacarp surpasses the radial cell (Fig. 464); 3rd antennal segment 1.2 times 4th segment (Fig. 461); precoxal suture absent, except for a shallow depression (Fig. 461); ovipositor distinctly longer than fore wing; 2nd tergite of metasoma weakly sculptured basally (Fig. 468); epistomal suture complete (Fig. 465) . . . . *Stegnocella* gen. nov. (p. 177)

— Metacarp ends near apex of the radial cell (Fig. 24); 3rd antennal segment 0.8 times 4th segment (Fig. 22); precoxal suture coarsely punctate (Fig. 22); ovipositor much shorter than fore wing; 2nd tergite smooth; epistomal suture absent medially (Fig. 26) . . . . *Blacozona* gen. nov. (p. 176)

3. Metasoma completely enclosed by the 2nd and following tergites (Fig. 469), sternites invisible and ventral side of metasoma equally sclerotized as its dorsal side; submedial cell strongly widened apicad (Fig. 475); ovipositor sheath 0.07 times fore wing (Fig. 469) . . . . *Apoblacus* gen. nov. (p. 245)

— Metasoma not completely enclosed by its tergites (Fig. 390), sternites are visible and ventral side of metasoma less sclerotized than its dorsal side; submedial cell less widened apicad (Fig. 442); ovipositor sheath 0.15—0.88 times fore wing (Fig. 352) 4

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[1]) Dorsope very large and deep, almost meeting each other in combination with deep laterope; medial carina of propodeum absent and with a medio-dorsal pentagonal area, cf. Euphorinae-Centistini.

4. Scutellum with large spine (Fig. 293); lateral carina of scutellum in basal half only (Fig. 298); fore and middle claws of ♀ with blackish bristles and teeth (Fig. 296) . . . . *Artocrus* gen. nov. (p. 247)

— Scutellum without spine, sometimes lateral carina of scutellum protruding apically (Fig. 213); claws simple or with teeth and bristles . . . . (= *Blacus* Nees s.l.) 5

5. cu 1 (and 2) absent (Fig. 450); tarsal claws simple . . . . *Neoblacus* Ashmead (p. 243)

— cu 1 (and usually 2) present (Fig. 442); tarsal claws simple or with bristles and teeth 6

6. Occipital carina completely absent; medial carina of propodeum divided apically (Fig. 63), forming a narrow medial area . . . *Ischnotron* subgen. nov. (p. 183)

— Occipital carina present, at least laterally; medial carina undivided, or divided, then usually medial area wider dorsally (Fig. 86) 7

7. Propodeal carinae less developed (Fig. 333, 341, 351) and lateral carina of scutellum absent (Fig. 349) or weakly developed (Fig. 385, 388); posterior division of medial carina of propodeum indistinct or absent (Fig. 333, 341); antennal segments of ♀ 17; fore claw of ♀ simple or bristles indistinct, yellowish; nervellus from middle of mediella or from distal (Fig. 300, 378, 422), seldom from more basal (Fig. 439) . . . . *Blacus* Nees (p. 221)

— Propodeal carina (Fig. 113, 161) and usually lateral carina of scutellum (Fig. 160) distinctly developed; medial carina divided posteriorly (Fig. 86) or undivided (Fig. 161, 205); antennal segments of ♀ seldom 17 (Fig. 46, 51, 134); fore claw of ♀ with blackish bristles or simple; nervellus usually basal to middle of mediella, seldom from more distal (Fig. 33, 151, 158) 8

8. Medial carina of propodeum divided posteriorly, resulting in 3 posterior areas (Fig. 86, 94), of which the medial area usually is wider, at least dorsally and comparable in length to length dorsal surface of propodeum or longer; if posterior surface of propodeum is strongly reticulate, then 2nd tergite of metasoma striate; middle claw of ♀ always simple 11

— Medial carina undivided posteriorly, medio-posteriorly propodeum usually covered with reticulate sculpture and areas indistinct (Fig. 161, 255); if medial carina is distinctly divided then medial area rectangular and distinctly shorter than dorsal surface of propodeum (Fig. 136) or medial area narrow (Fig. 155) and middle claw of ♀ with distinct blackish bristles; 2nd metasomal tergite completely smooth or nearly so 9

9. Propodeal tubercle large (Fig. 249, 255) and scutellum reticulate (Fig. 261) . . . . *Hysterobolus* Viereck (p. 215)

— Propodeal tubercle absent or small (Fig. 141), if large then scutellum smooth 10

10. Medial carina of propodeum divided posteriorly, medial area rectangular, smooth, and length of posterior surface much shorter than dorsal surface of propodeum (Fig. 136); antennal segments of ♀ 17 and propodeal tubercles absent . . . . *Contochorus* subgen. nov. (p. 195)

— Medial carina of propodeum undivided, or if indistinctly divided, medial area cellulate and usually scarcely discernable from surrounding reticulation (Fig. 155, 161), length of dorsal surface of propodeum about equal to posterior surface (Fig. 155); antennal segments of ♀ 15 or 19—25 if propodeal tubercle is absent . . . . *Ganychorus* Haliday (p. 196)

11. Metapleural flange distinct; hypopygium large (Fig. 72); malar suture present (Fig. 78); 2nd metasomal tergite often sculptured; ovipositor sheath usually shorter and bent ventrad (Fig. 72, 120, 127) . . . . *Tarpheion* subgen. nov. (p. 185)

— Metapleural flange indistinct, at most carina somewhat protruding; hypopygium small; malar space without groove; 2nd metasomal tergite smooth; ovipositor sheath usually long and slightly bent only (Fig. 30, 46) 12

12. Scutellar suture smooth or longitudinal carina indistinct; metasoma compressed (Fig. 37, 53); lateral carina of scutellum present apically (Fig. 48); antenna stout, not or indistinctly dilated apically (Fig. 46) . . . *Leioblacus* subgen. nov. (p. 180)

— Scutellar suture with distinct medial carina; metasoma not compressed; lateral carina of scutellum absent apically (Fig. 36); antenna slender, distinctly dilating apically (Fig. 30) . . . . *Mesoxiphium* subgen. nov. (p. 179)

Blacozona gen. nov.
(Fig. 22—29)

Etymology: from "blax", Greek for dull because of the dull 1st metasomal tergite; it also is a combination of the generic names *Blacus* and *Eubazus* to indicate the intermediate position of the new genus. Gender, feminine.

Type-species: *Blacozona psichora* spec. nov.

Diagnosis. — Antenna relatively many-segmented, tapering apicad, 3rd segment shorter than 4th segment; eye bare; occipital carina complete; epistomal suture absent medially; malar suture deep and distinct; genal flange distinctly developed; pronope deep, medium-sized; precoxal suture complete; pleural suture relatively narrow; metapleural flange small, sharp; notauli completely developed; lateral carina of scutellum completely absent; dorsal surface of propodeum somewhat longer than its posterior surface, dorsally a medial carina and posteriorly a rather narrow area is indicated (Fig. 23); propodeal tubercle small; metacarp not surpassing radial cell; branchial cell closed; nervellus relatively long; small remnants of aqu 1 + 2 present; all tarsal claws simple; length of hind femur 4.1 times its width; length of 1st metasomal tergite 1.2 times its apical width; glymma wide anteriorly; laterope rather deep and large; dorsope large; 2nd tergite smooth; ovipositor straight, length of its sheath 0.27 times fore wing; hypopygium large.

Distribution. — Neotropical: one species.

Blacozona psichora spec. nov. (Fig. 22—29)

Holotype, ♀, length of body and fore wing both 3.5 mm.

Head. — Antennal segments incomplete (32 in ♀-paratype (Fig. 29), apical segment composed, distinctly tapering apicad), length of 3rd segment 0.8 times 4th segment, length of 3rd and 4th segments 2.6 and 3.2 times their width, respectively, penultimate segments wider than long; maxillar palpus slender, somewhat longer than height of head; dorsal length of eye 1.4 times temple; temple and vertex finely punctulate; POL: Ø ocellus : OOL = 16 : 9 : 20; frontal suture absent; frons concave above antennal sockets; occipital carina distinctly developed, area in front of it almost smooth in dorsal half, crenulate ventrad; face and clypeus somewhat convex, finely punctulate; anterior tentorial pits deep (Fig. 26); apical margin of clypeus slightly sinuate, thin; mandible sculptured basally; length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.5 times its height; side of pronotum with large, distinctly separated punctures (Fig. 22); zone behind prepectal carina crenulate; epicnemial suture, precoxal suture and side of scutellum coarsely punctate; pleural suture rather shallowly crenulate; episternal scrobe distinct; metapleura punctato-reticulate as propodeum; notauli rather widely punctato-crenulate, distinctly widening apicad; mesoscutal lobes flattened, superficially punctulate; scutellar suture wide, moderately deep, with four rather weakly developed longitudinal carinae, punctato-rugose laterally; scutellum moderately convex, superficially punctulate; propodeal tubercle weakly developed, consisting of somewhat protruding carinae.

Wings. — First discoidal cell subpetiolate, rather sharp anteriorly; r 2 slightly bent; d 1 : d 2 = 3 : 16; parastigma rather large.

Legs. — Hind coxa rugose dorsally, femur and tibia of hind leg punctate; tarsal claws rather wide basally, slender apically; length of femur, tibia and basitarsus of hind leg 4.1, 7.9 and 7.0 times their width, respectively.

Metasoma. — Length of 1st tergite 1.2 times its apical width, spiracles slightly protruding, surface almost completely punctato-reticulate (Fig. 23), dorsal carinae distinct in basal two-fifths; length of ovipositor sheath 0.27 times fore wing; whole metasoma rather closely setose.

Colour. — Blackish brown; scapus, pedicellus, pronotum, and tegulae, reddish; coxae, fore and middle legs largely, whitish yellow; hind femur dorsally, hind tibia and basitarsus largely, 2nd and 3rd metasomal tergites and pterostigma, dark brownish; wings somewhat infuscated.

Holotype ♀ in MCZ, Cambridge (USA): "Villa Nougues, Tucuman, Argent., xi.26/28-[19]64, 1250 m, C. Porter". Paratype: 1 ♀, topotypic, xii.-5/8-[19]64 (AC).

Note. This genus, together with *Stegnocella*, forms the group with the largest number of plesiomorphous characters in the Blacini. But the apomorphous condition of propodeum and 1st tergite makes its connections with the Blacini clear, despite its resemblance to the Brachistini. The apomorphous characters are: 1 — dorsal surface of propodeum longer than posterior surface (Fig. 22); 2 — dorsope distinctly developed; 3 — side of pronotum punctate; 4 — ovipositor sheath relatively short; 5 — hypopygium large; 6 — 3rd antennal segment shorter than 4th segment; 7 — small propodeal tubercle present; 8 — pleural suture reduced; 9 — epistomal suture obliterated.

The plesiomorphous characters are: 1 — lateral carina of scutellum absent; 2 — number of antennal segments large; 3 — remnants of aqu 1 + 2; 4 — submediellan cell large, nervellus long; 5 — 1st brachial cell closed apically; 6 — frons concave; 7 — mandible sculptured; 8 — s + sc relatively wide and composed (Fig. 24).

Stegnocella gen. nov.

(Fig. 461—468)

Etymology: from "stegnus" (Latin for closed) and "cella" (Latin for cell) because of the closed 1st brachial cell. Gender, feminine.

Type-species: *Stegnocella calyptoides* spec. nov.

Diagnosis. — Antenna many-segmented, tapering apicad, 3rd segment longer than 4th segment; eye bare; occipital carina and epistomal suture complete; malar suture absent; occipital flange distinctly developed; pronope deep with a deep short furrow at both sides; precoxal suture absent except for a smooth depression (Fig. 461); pleural suture medium-sized; metapleural flange large and blunt; notauli completely developed; lateral carina of scutellum only present in anterior third (Fig. 466); dorsal surface of propodeum somewhat longer than posterior surface (Fig. 461, 468) and without carinae; its posterior surface with 2 submedial carinae; propodeal tubercle absent; metacarp surpasses distinctly the radial cell (Fig. 464); brachial cell closed; nervellus comparatively long; remnants of aqu 1 + 2 and of aqu′ are present; all tarsal claws simple; length of hind femur 5.0 times its width; length of 1st metasomal tergite 2.1 times its apical width; glymma medium-sized; laterope rather deep, medium-sized; dorsope rather large; basal half of 2nd tergite superficially sculptured (Fig. 468); ovipositor almost straight, length of its sheath 1.38 times fore wing; hypopygium large.

Distribution. — Neotropical: one species.

Stegnocella calyptoides spec. nov. (Fig. 461—468)

Holotype, ♀, length of body 1.9, of fore wing 1.8 mm.

Head. — Antennal segments 32, length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segment 3.2 and 2.6 times their width, respectively, penultimate segments quadrate; maxillary palpus slender, about as long as height of head; dorsal length of eye 1.1 times temple; temple and vertex smooth; POL : Ø ocellus : OOL = 11 : 6 : 11; frontal suture absent; frons almost flat; occipital carina distinctly developed, area in front of it smooth; face and clypeus moderately convex, smooth; antennal tentorial pits deep (Fig. 465); apical margin of clypeus wide, straight and thin; mandibles smooth; length of malar space about 1.6 times the basal width of mandible.

Mesosoma. — Length of mesosoma 1.6 times its height; side of pronotum reticulato-rugose anteriorly and almost smooth posteriorly; zone behind prepectal carina smooth; epicnemial suture, precoxal suture and side of scutellum smooth; pleural suture medium-sized, distinctly crenulate; episternal scrobe medium-sized; metapleura coarsely punctate; notauli rather deep and narrow, only crenulate in anterior half; mesoscutal lobes moderately convex, smooth; scutellar suture wide, rather shallow, with one distinctly developed longitudinal carina; scutellum smooth, convex; propodeal tubercle absent but with a rather deep depression above the base of the hind coxa (Fig. 461); dorsal surface of propodeum transversely reticulato-punctate (but indistinctly developed anteriorly), its posterior surface smooth except for both carinae (Fig. 468).

Wings. — First discoidal cell sharp anteriorly; r 2 almost straight; d 1 : d 2 = 4 : 14; parastigma medium-sized.

Legs. — Hind coxa smooth except for two short striae anteriorly; femur and tibia of hind leg almost smooth; tarsal claws rather wide basally, slender apically; length of femur, tibia and basitarsus 5.0, 7.8 and 7.5 times their width, respectively.

Metasoma. — Length of 1st tergite 2.1 times its apical width, its surface rugoso-reticulate medially and almost smooth laterally (Fig. 468), spiracles distinctly protruding, dorsal carinae distinct in anterior third; length of ovipositor sheath 1.38 times fore wing; tergites with setae more or less in submedial rows; hypopygium truncate apically.

Colour. — Dark brown; antenna generally, palpi, antennal sockets, mandibles, tegulae and legs, yellowish; pronotum, reddish.

Holotype in CNC, Ottawa: "Termas Tolhuaca, Malleco, Chile, 15-20.i.1959, L.E. Peña", "very primitive genus, mp = 6, lp = 3, anellan + 2 anals, new genus ?Blacini, det. W. R. M. Mason 74".

Notes. The resemblance to *Charmon* (Zelinae) may be mainly convergential, while the greater resemblance to the subgenus *Calyptus* of *Eubazus* (Brachistini) may indicate the relationship between the sister-tribes Blacini and Brachistini. But a male from El Coigo (Curico, Chile, i-ii.1961, L. E. Peña, CNC) has no metapleural flange, pronope indistinct and anallan vein more distinctly developed, as in *Charmon*. *Charmon* is distinguished by the absence of dorsal carinae and dorsope and by the inclivous nervulus, while *Calyptus* has no dorsope or if weakly indicated, then near the spiracles; dorsal surface of propodeum about as long as posterior surface and 1st brachial cell almost always open apically.

The apomorphous characters of *Stegnocella* are: 1 — dorsal surface of propodeum without distinct carinae and longer than its posterior surface (Fig. 468); 2 — dorsope distinctly developed; 3 — hypopygium large; 4 — setae of metasoma mainly arranged in rows dorsally; 5 — malar suture absent; 6 — epicnemial and precoxal sutures smooth; 7 — mandibles smooth.

The plesiomorphous characters are: 1 — lateral carina of scutellum scarcely developed; 2 — number of antennal segments large; 3 — remnants of aqu 1 (and less distinctly of) aqu 2 and aqu′ present; 4 — submediellan cell and nervellus relatively long; 5 — brachial cell closed; 6 — division between s and sc present (Fig. 464); 7 — metacarp surpasses the radial cell; 8 — metapleural flange large; 9 — posterior surface of propodeum weakly differentiated from dorsal surface; 10 — ovipositor long; 11 — 2nd tergite of metasoma sculptured; 12 — margin of clypeus wide and thin; 13 — occipital carina completely and strongly developed.

Blacus Nees
Mesoxiphium subgen. nov.
(Fig. 30—36)

Etymology: from "mesos" (Greek for middle) and "xiphos" (Greek for sword) because of the long ovipositor which gives the species an appearance intermediate between Blacini and Brachistini; gender, neuter.

Type-species: *Blacus monostigmaticus* spec. nov.

Diagnosis. — Antennal segments restricted in number, dilated apicad (Fig. 30); palpi medium-sized; eye bare; occipital carina complete and medium-sized; frons and vertex smooth; clypeus punctate, its apical margin straight, malar suture absent; precoxal suture shallow, almost absent; pleural suture narrow, indistinctly crenulate; metapleural flange absent, but carinae somewhat protruding; notauli complete but shallow; scutellar suture deep, with one longitudinal carina; scutellum smooth, its lateral carina absent in apical 0.4; 1st discoidal cell sharp anteriorly; parastigma indistinct; brachial cell rather narrowly open apically; all tarsal claws simple, slender; length of hind femur 5.8 times its width; dorsal surface of propodeum with medial and both lateral carinae weakly developed, on posterior surface carinae more distinct, forming three areas (Fig. 35); propodeal tubercle absent; 1st metasomal tergite medium-sized (Fig. 35), rather flat, dorsope large; 2nd tergite smooth; ovipositor long, its sheath about 3/4 length of fore wing, somewhat bent ventrad apically (Fig. 30); hypopygium small.

Distribution. — Neotropical: one species.

B. (Mesoxiphium) monostigmaticus spec. nov. (Fig. 30—36)

Holotype, ♀, length of body 2.4, length of fore wing 2.5 mm.

Head. — Antennal segments 14, dilating apicad, length of 3rd segment 1.1 times 4th segment, length of 3rd and 4th segments 9.5 and 9.0 times their width, respectively, scapus smooth, length of penultimate segments ca. twice their width; maxillary palpus slightly longer than height of head; dorsal length of eye 1.2 times temple; POL : Ø ocellus : OOL = 5 : 2 : 4; frontal suture absent; stemmaticum slightly protruding; area in front of occipital carina almost smooth; face rather convex, nearly smooth; anterior antennal pits rather large; clypeus moderately convex; length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.6 times its height; sides of pronotum reticulato-rugose, except for antero-dorsal area (Fig. 30); side of middle lobe of mesoscutum about smooth; zone behind prepectal carina almost smooth; epicnemial suture smooth; precoxal suture shallowly depressed, almost smooth (Fig. 30); pleural suture indistinctly and sparsely crenulate; episternal scrobe medium-sized, rather deep; metapleura rugoso-reticulate; notauli rather shallow, superficially crenulate; mesoscutal lobes moderately convex; scutellar suture wide and long; scutellum rather convex, its lateral carina present in anterior three-fifths only; side of scutellum rugose; dorsal surface of propodeum coriaceous with medial and both lateral carinae weakly developed, three posterior areas distinct (Fig. 35).

Wings. — r 2 almost straight; d 1 : d 2 = 1 : 5.

Legs. — Hind coxa rugose dorsally; femur and tibia of hind leg almost smooth; length of femur, tibia and basitarsus of hind leg 5.8, 12.3 and 7.0 times their width, respectively.

Metasoma. — Length of 1st tergite 1.8 times its apical width, rather flat, densely reticulato-rugose (Fig. 35), dorsal carinae distinct in basal fifth, its spiracle protruding; length of ovipositor sheath 0.78 times fore wing.

Colour. — Reddish brown; pedicellus, annellus, mouth parts, coxae, trochanters, femora, bases of tibiae and pterostigma, yellowish.

Holotype ♀ in CNC, Ottawa: "Antillanca, Osorno, Chile, 18.iii.1955, 1000 m, L.E. Peña", "*Blacus* ? or *Dyscoletes*, det. W. R. M. Mason 72".

Note. Resembles the Palaearctic *Eubazus flavipes*, but the latter is distinguished by shape of 1st metasomal tergite, shorter dorsal surface of propodeum, different number and shape of antennal segments. Important apomorphous characters are: 1 — antenna few-segmented, dilated apicad; 2 — precoxal suture shallow, nearly absent; 3 — pleural suture narrow and indistinctly crenulate; 4 — metapleural flange absent; 5 — lateral carina of scutellum in anterior 0.4 present; 6 — parastigma indistinctly developed; 7 — 2nd metasomal tergite smooth.

Leioblacus subgen. nov.
(Fig. 37, 38, 40, 41, 46—57)

Etymology: from "leios" (Greek for smooth) and *Blacus*, because of smooth scutellar suture; gender, masculine.

Type-species: *Blacus compressiventris* spec. nov.

Diagnosis. — Length of body 1.8—2.2, length of fore wing 1.9—2.5 mm; antennal segments of ♀ 17 or 18, of ♂ 15—16; eye bare; occipital carina complete; frons and vertex smooth; frontal suture absent; clypeus smooth or nearly so; face smooth; length of malar space about equal to basal width of mandible; malar suture absent, but an indistinct depression may be present; side of pronotum largely smooth; epicnemial suture smooth; precoxal suture absent or reduced to a medial crenulate depression (Fig. 46); metapleural flange absent, except for somewhat protruding carina; notauli largely absent or complete; scutellar suture wide or subquadrate, smooth, without longitudinal carinae; scutellum smooth, its lateral carina completely developed, not protruding apically; side of scutellum smooth or superficially rugose; parastigma small; 1st discoidal cell sharp or narrowly truncate anteriorly; d 1 : d 2 = 1 : 2.9—3.3; metacarp somewhat surpassing radial cell (Fig. 47); length of hind femur 5.5—6.8 times its width; hind coxa smooth; all claws of ♀ simple; propodeal tubercle absent; propodeal carinae distinctly developed, apically with slender medial area formed by division of medial carina; sides of 1st metasomal tergite about parallel; 2nd tergite of metasoma smooth; ovipositor straight; length of ovipositor sheath 0.31—0.70 times fore wing; metasoma after 1st tergite smooth, strongly compressed, even in examined males; hypopygium small.

Distribution. — Palaearctic: one species; Nearctic: one species.

Note. Important apomorphous characters are: 1 — antenna few-segmented; 2 — precoxal suture absent or medially developed only; 3 — metapleural flange absent; 4 — scutellar suture smooth; 5 — lateral carina of scutellum complete; 6 — parastigma small or indistinctly developed; 7 — metasoma strongly compressed; 8 — 2nd metasomal tergites smooth; 9 — notauli and nervellus more or less reduced.

Key to species of the subgenus *Leioblacus*

1. Notauli complete, deep (Fig. 48); length of ovipositor sheath 0.31 times fore wing; precoxal suture present medially (Fig. 46); r2 bent (Fig. 47); nervellus absent (Fig. 47) . . . . *aulacis* spec. nov. (p. 181)

— Notauli absent posteriorly (Fig. 54) or weakly indicated (Fig. 55); length of ovipositor sheath 0.53—0.70 times fore wing; precoxal suture absent (Fig. 51); r2 straight (Fig. 51); nervellus present (Fig. 51) 2

2. Mesoscutum smooth, usually notauli even basally absent (Fig. 54); hind femur somewhat more slender (Fig. 56); 1st metasomal tergite yellowish, remaining of metasoma brownish, contrasting . . . . . . *compressiventris* spec. nov. (p. 182)

— Mesoscutum with notauli weakly indicated (Fig. 55); hind femur somewhat less slender (Fig. 41); 1st metasomal tergite brownish as remainder of metasoma, not contrasting . . . . *fischeri* Haeselbarth (p. 183)

Blacus (Leioblacus) aulacis spec. nov. (Fig. 37, 38, 46—50)

Holotype, ♀, length of body 1.8, length of fore wing 1.9 mm.

Head. — Antennal segments 17 (but apical segment consisting of two fused segments), length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 4.0 and 3.0 times their width, respectively, penultimate segments somewhat longer than wide; dorsal length of eye 0.8 times temple (Fig. 50); POL : Ø ocellus : OOL = 7 : 3 : 8; area in front of occipital carina indistinctly crenulate, almost smooth; face unevenly convex; apical margin of clypeus straight medially (Fig. 38).

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum smooth, except for some rugae; zone behind prepectal carina finely crenulate; precoxal suture reduced to median depression with some carinae (Fig. 46); notauli complete, distinctly developed, superficially crenulate; mesoscutal lobes flattened dorsally; scutellar suture subquadrate (Fig. 48); surface of propodeum smooth or with some microsculpture between carinae.

Wings. — First discoidal cell narrowly truncate anteriorly; r2 evenly bent; d 1 : d 2 = 7 : 20; nervellus absent; nervulus indistinct (Fig. 47).

Legs. — Length of femur, tibia and basitarsus of hind leg 5.5, 11.5 and 8.0 times their width, respectively.

Metasoma. — Length of 1st tergite 2.8 times its apical width, surface smooth, except for some carinae, dorsal carinae complete (Fig. 37), spiracle flat; length of ovipositor sheath 0.31 times fore wing.

Colour. — Dark brown; scapus, pedicellus, mandible, palpi, coxae, trochanters, femora, tibiae, tarsi and metasoma basally, more or less yellowish.

Holotype ♀ in CNC, Ottawa: "Mex. Dgo. 3 mi. E. El Salto, 8500 [ft], 10 July 1964, W. R. M. Mason".

Blacus (Leioblacus) compressiventris spec. nov. (Fig. 51—54, 56, 57)

Holotype, ♀, length of body 2.1, length of fore wing 2.2 mm.

Head. — Antennal segments 18 (paratypes: 8 have 18, 1 has 17 and 1 has right 18 and left 17), bases of 3rd-8th segments hyaline, length of 3rd segment equal to 4th segment, length of 3rd and 4th segments 3.0 times their width, penultimate segments slightly longer than wide, antenna slightly widened apicad; dorsal length of eye 0.8 times temple (Fig. 57); POL : Ø ocellus : OOL = 9 : 6 : 14; area in front of occipital carina smooth; face almost flat; apical margin of clypeus weakly concave medially (Fig. 52).

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum sparsely rugose, largely smooth (Fig. 51); zone behind prepectal carina smooth; precoxal suture absent; notauli absent, except for smooth depression anteriorly (Fig. 51); mesoscutum somewhat unevenly convex; scutellar suture wide (Fig. 54); surface of propodeum almost smooth.

Wings. — First discoidal cell sharp anteriorly (but variable in paratypes, sometimes in right wing sharp and in left wing truncate); r2 straight; d 1 : d 2 = 3 : 10; nervellus and nervulus distinct (Fig. 51).

Legs. — Length of femur, tibia and basitarsus of hind leg 6.8, 11.1 and 8.0 times their width, respectively.

Metasoma. — Length of 1st tergite 2.5 (paratypes: 1.8—2.5) times its apical width, surface smooth, except for some rugulosity, shiny, dorsal carinae almost reach apex, spiracle protruding (Fig. 53); length of ovipositor sheath 0.53 times fore wing (in paratypes up to 0.70 times).

Colour. — Dark brown; mandible, labrum, palpi, base of antenna, legs (usually except hind tibia and femur) and 1st metasomal tergite, yellowish; pterostigma, light brown; hind tibia apically more brownish (in paratypes hind femur apically often darkened).

Holotype ♀ in CNC, Ottawa: "Old Chelsea, Que., 20.ix.1961, J. R. Vockeroth". Paratypes (22) from type-locality, Ontario (Innisville, Chatterton, Marmora area, at latter locality collected in "moist fungus-rich wooded creek bed"); British Columbia (Terrace, Hixon); North Carolina (Wayah Gap nr. Franklin, Highlands (at light));

Georgia (Holcomb Creek, Pine Mnt., Warwoman Creek); New Hampshire (Lakes of the Clouds, 5000 ft., Mt. Washington); South Carolina (Anderson) (CNC, AC).

Blacus (Leioblacus) fischeri Haeselbarth (Fig. 40, 41, 55)

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 122—123, Fig. 41, 44.

Through the kindness of Dr. Fischer I was able to examine the holotype. It much resembles *B. compressiventris*, but lengths of femur, tibia and basitarsus of hind leg are 5.5, 9.2 and 6.5 times their width, respectively (Fig. 41); also the antenna differs slightly (Fig. 40). Species only known from Central Europe, seldom collected.

Ischnotron subgen. nov.
(Fig. 42—45, 58—71)

Etymology: from "ischnos" (Greek for slender) and "otron" (Greek for abdomen) because of its slender metasoma; gender, neuter.

Type-species: *Blacus parvus* Haeselbarth.

Diagnosis. — Length of body 1.5—2.2, length of fore wing 1.5—2.1 mm; antennal segments of ♀ 17—20 (♂ unknown); eye bare; occipital carina completely absent (but remnant of occipital flange present in *javensis*); frons and vertex smooth; face smooth or nearly so; length of malar space about equal to basal width of mandible, somewhat shorter in *parvus*, somewhat longer in *fulvicollis*; malar suture present; side of pronotum largely smooth; epicnemial suture smooth; precoxal suture more or less reduced, at least partly crenulate except in *javensis* (Fig. 58, 67); metapleural flange small to medium-sized, sharp; notauli largely reduced to completely developed and crenulate; scutellar suture deep and wide, with one longitudinal carina; scutellum smooth, its lateral carina complete, but in *fulvicollis* partly reduced or absent, not protruding apically; side of scutellum smooth, except for some short crenulae; parastigma small to rather large; 1st discoidal cell more or less truncate anteriorly; r2 straight or slightly bent; d 1 : d 2 = 1 : 7.7—30; metacarp not or slightly surpassing radial cell; length of hind femur 5.2—6.4 times its width; hind coxa smooth; all claws of ♀ simple; propodeal tubercle absent; propodeal carinae distinct, medial carina divided, forming a slender medial area (Fig. 44, 63); ovipositor more or less bent ventrad; length of ovipositor sheath 0.27—0.38 times fore wing; metasoma after 2nd tergite smooth; 2nd tergite smooth or finely and longitudinally rugose; metasoma more or less compressed apically; hypopygium medium-sized to large (Fig. 58, 67).

Distribution. — Palaearctic: one species; Ethiopian: two species; Oriental: one species.

Note. Superficially *Ischnotron* resembles *Leioblacus*, but *Ischnotron* has a carina in scutellar suture, malar suture present, head transverse and occipital carina completely absent.

Important apomorphous characters are: 1 — occipital carina completely absent; 2 — malar suture present; 3 — sculpture of precoxal suture reduced; 4 — ovipositor more or less bent ventrad; 5 — hypopygium medium-sized to large; 6 — metasoma more or less compressed.

Key to species of the subgenus *Ischnotron*

1. Notauli superficial, absent apicad (Fig. 64); lateral carina of scutellum indistinct; ovipositor sheath somewhat longer or about equal to hind tibia . . . . *parvus* Haeselbarth (p. 184)

— Notauli deep, present apically (Fig. 42, 65); lateral carina of scutellum distinct, at least apically; length of ovipositor sheath shorter than hind tibia (Fig. 67, 70) . . 2

2. First metasomal tergite distinctly widened apicad, slightly shorter than twice its apical width; antennal segments of ♀ 20 . . . . . . *fulvicollis* Haeselbarth (p. 184)

— First tergite not or scarcely widened apicad (Fig. 44, 68), length more than twice its apical width; antennal segments of ♀ 18—19 3

3. First metasomal tergite more slender (Fig. 68), length 3.1 times its apical width; temples more narrowed, length of eye 1.4 times temple dorsally (Fig. 66); mesosoma yellowish; notauli wider and deeper (Fig. 65); scutellum stout (Fig. 65); head in frontal aspect distinctly narrowed ventrad (Fig. 71); length of malar space equal to basal width of mandible . . . . *javensis* spec. nov. (p. 184)

— First tergite less slender (Fig. 44), length 2.4—2.5 times its apical width; temples less narrowed, length of eye 1.7 times temple dorsally (Fig. 45); mesosoma dark reddish brown; notauli narrower and less deep (Fig. 42); scutellum more slender (Fig. 42); head in frontal aspect less narrowed ventrad (Fig. 43); length of malar space distinctly less than basal width of mandible . . *gracilis* Haeselbarth (p. 185)

Blacus (Ischnotron) parvus Haeselbarth (Fig. 58—64)

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 78—79.

Described from S. Africa (Transvaal); antennal segments of ♀ usually 18, less frequently 17, and basal 0.6—0.8 of 2nd metasomal tergite finely longitudinally rugose but figured specimen from Zaïre (Elisabethville, ii.1940, H. J. Brédo, MAC) and a ♂ from S. Africa ("Mossel Bay, Cape Province, October, 1921", BM) have 2nd tergite smooth. Further data of figured specimen: length of 3rd segment 1.6 times 4th segment, length of 3rd and 4th segments 5.5 and 3.5 times their width, respectively; dorsal length of eye 1.9 times temple (Fig. 60); POL : Ø ocellus : OOL = 3 : 2 : 5; length of mesosoma 1.3 times its height; zone behind prepectal carina smooth; precoxal suture reduced, short crenulae in middle only; notauli present in basal half only (Fig. 64); mesoscutal lobes moderately convex; lateral carina of scutellum complete, rather strongly developed; first discoidal cell narrowly truncate anteriorly in right wing, but wider in left wing; r2 slightly bent; length of femur, tibia and basitarus of hind leg 5.8, 10.0 and 9.5 times their width, respectively; surface of propodeum smooth, but superficially rugose apically; length of 1st metasomal tergite 2.7 times its apical width, surface superficially rugose, dorsal carinae almost reach apex (Fig. 63), spiracle flat; ovipositor slightly bent; length of ovipositor sheath 0.38 times fore wing.

Blacus (Ischnotron) fulvicollis Haeselbarth

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 79—80.

Described from same locality as *parvus*, but less common.

Blacus (Ischnotron) javensis spec. nov. (Fig. 65—71)

Holotype, ♀, length of body and of fore wing 1.6 mm.

Head. — Antennal segments 19, length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 4.5 and 3.8 times their width, respectively, length of penultimate segments about twice their width; dorsal length of eye 1.4 times temple, temple roundly narrowed apicad; POL : Ø ocellus : OOL = 7 : 3 : 8; frontal suture absent; apical margin of clypeus straight medially.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum smooth, except for some carinae and microsculpture anteriorly; zone behind prepectal carina smooth except for some short carinae; precoxal suture almost smooth, shallowly depressed medially; metapleural flange sharp, medium-sized; notauli deep, wide and completely crenulate; mesoscutal lobes moderately convex; scutellum rather truncate apically, its lateral carina complete, medium-sized; propodeum smooth except for strongly developed carinae which form 3 posterior areas, its middle area rather slender (Fig. 68).

Wings. — First discoidal cell truncate anteriorly; r 2 straight; d 1 : d 2 = 1 : 30 but nervulus and nervellus indistinct, almost completely absent (Fig. 69); parastigma rather large; cu 1 and n. rec. weakly sclerotized; subdiscoideus almost straight.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.4, 10.0 and 8.2 times their width, respectively.

Metasoma. — Length of 1st metasomal tergite 3.1 times its apical width, surface smooth, except for some superficial rugae (Fig. 68), dorsal carinae distinct in basal nine-tenth, spiracle flat; 2nd tergite smooth; ovipositor bent ventrad; length of ovipositor sheath 0.30 times fore wing; hypopygium large (Fig. 67); metasoma strongly compressed in apical half.

Colour. — Yellowish; antenna (except for 4 basal segments), stemmaticum, wing veins, pterostigma and apical half of metasoma, brown.

Holotype ♀ in BM, London: "Java, Bogor, 24-25.iv.1954, A. H. G. Alston, B.M. 1954-414", "at light".

Blacus (Ischnotron) gracilis Haeselbarth (Fig. 42—45)

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 121—122, Fig. 42, 43, 45.

Through the kindness of Dr. Haeselbarth I was able to study the paratype from Marling (nr. Meran, Italy). Length of 1st metasomal tergite 2.5 times its apical width (Fig. 44); length of ovipositor sheath 0.27 times fore wing; ovipositor distinctly bent ventrad; dorsal length of eye 1.7 times temple (Fig. 45); temples relatively less narrowed; nervulus and nervellus indistinct, almost absent; subdiscoideus almost straight.

Tarpheion subgen. nov.
(Fig. 39, 72—133, 289—291)

Etymology: from "tarpheios" (Greek for thick) because of the relatively short and wide body; gender, neuter.

Type-species: *Blacus chillcotti* spec. nov.

Diagnosis. — Length of body and of fore wing 1.5—3.5 mm; antennal segments of ♀ 18—27, usually 20—23; eye bare; occipital carina present, at least laterally; face, clypeus, frons and vertex smooth; apical margin of clypeus straight medially; length of malar space equal to or ± twice basal width of mandible; malar suture present; side of middle lobe of mesoscutum more or less rugose; precoxal suture complete, more or less crenulate (Fig. 88, 95); metapleural flange distinct, medium to large; notauli complete, usually wide and crenulate; scutellar suture wide and deep, in examined species with one large longitudinal carina; scutellum smooth, its carina usually complete, its side rugose, seldom reticulate; parastigma medium-sized to large; r 2 straight or nearly so;

1st discoidal cell sharp to truncate anteriorly; d 1 : d 2 = 1 : 1.9—15.0; metacarp not distinctly surpassing radial cell; length of hind femur 5.6—7.6 times its width; hind coxa rugose to smooth dorsally; fore claw of ♀ with blackish bristles or simple; middle and hind claws simple; propodeal tubercle absent; medial carina of propodeum divided, medial area usually wide dorsally (Fig. 73, 94); ovipositor bent ventrad; length of ovipositor sheath 0.16—0.43 times fore wing; 2nd tergite of metasoma usually sculptured (Fig. 86, 94); hypopygium (rather) large.

Distribution. — Nearctic: one species; Neotropical: three species; Ethiopian: eight species; Palaearctic: two species.

Note. Important apomorphous characters are: 1 — malar suture present; 2 — lateral carina of scutellum complete; 3 — ovipositor bent ventrad; 4 — hypopygium relatively large.

Key to Nearctic and Neotropical species of the subgenus *Tarpheion*

1. Fore claw of ♀ with distinct, blackish bristles (Fig. 77); length of ovipositor sheath 0.19—0.23 times fore wing 2

— Fore claw of ♀ simple, at most with yellowish, small bristles; length of ovipositor sheath 0.29—0.36 times fore wing 3

2. Pterostigma yellow, relatively slender, r 1 somewhat longer than its width (Fig. 74); antennal segments of ♀ 23; 1st metasomal tergite less dilated apicad and constricted subbasally (Fig. 73); discoidal cell widely truncate anteriorly (Fig. 74); lateral carina of scutellum equally developed (Fig. 75) . . . . . *cerinus* spec. nov. (p. 187)

— Pterostigma brown, stout, r 1 subequal to its width (Fig. 84); antennal segments of ♀ 22; 1st metasomal tergite distinctly dilated apicad and constricted subbasally (Fig. 86); discoidal cell sharp anteriorly or nearly so; medially lateral carina of scutellum weakly developed as compared with its apical part (Fig. 83) . . . . *constrictus* spec. nov. (p. 188)

3. First metasomal tergite 1.5—1.8 times its apical width, distinctly widened apically (Fig. 94), surface less shiny, densely sculptured; dorsal length of eye 2.2—2.5 times length of temple, eye somewhat smaller (Fig. 89); striae of 2nd metasomal tergite closely spaced, reaching apex of tergite or almost so (Fig. 94); precoxal suture distinctly reticulate (Fig. 88) . . . . *chillcotti* spec. nov. (p. 189)

— First metasomal tergite 1.8—2.0 times its apical width, usually scarcely widened apically (Fig. 101), seldom somewhat more dilated, surface more shiny, less densely sculptured; dorsal length of eye 2.9—3.3 times length of temple, eye somewhat larger (Fig. 98); striae of 2nd metasomal tergite usually indistinct and relatively widely spaced (Fig. 101), sometimes more pronounced, at most on basal 0.7 of tergite; precoxal suture almost smooth, except for some rather superficial rugae (Fig. 95) . . . . *erugatus* spec. nov. (p. 190)

Key to Ethiopian species of the subgenus *Tarpheion*

1. Scutellum strongly and completely reticulate; antennal segments 26—27; fore claw with long, blackish bristles (cf. Fig. 77) . . . *annulicornis* Haeselbarth (p. 190)

— Scutellum largely smooth; antennal segments 18—23; fore claw simple 2

2. Second metasomal tergite nearly or completely smooth (Fig. 113) 3

— Second metasomal tergite distinctly striate (Fig. 115) 4

3. Temple slightly longer than eye dorsally (Fig. 103); length of malar space about twice basal width of mandible (Fig. 105); mesoscutum slender (Fig. 107) . . . . *decaryi* Granger (p. 191)
— Temple much shorter than eye dorsally (Fig. 109); length of malar space about equal to basal width of mandible (Fig. 111); mesoscutum stout (Fig. 112) . . . . *convexus* spec. nov. (p. 191)
4. Antennal segments 18; occipital carina complete . . *nanulus* Haeselbarth (p. 192)
— Antennal segments 21—23; occipital carina partly absent or complete 5
5. Antennal segments 22—23; lateral carina of scutellum bent (Fig. 291); hind femur widened (Fig. 1 in Haeselbarth, 1974) . . . *schimitscheki* Haeselbarth (p. 192)
— Antennal segments 21; lateral carina of scutellum rather straight (Fig. 112); hind femur less widened 6
6. Length of ovipositor sheath about 1.15—1.20 times length of hind tibia . . . 7
— Length of ovipositor sheath about equal to length of hind tibia or less 8
7. First metasomal tergite evenly, longitudinally striate (Fig. 39), dorsal carinae relatively weak; precoxal suture widely spaced reticulato-rugose anteriorly; apical segments of antenna relatively wider; basal half of 2nd metasomal tergite striate . . . . *gibber* Haeselbarth (p. 192)
— First metasomal tergite scarcely striate, dorsal carinae strongly developed (Fig. 115); precoxal suture with some weak crenulae; apical segments of antenna more slender (Fig. 114); basal 0.7 of 2nd metasomal tergite striate . . . . *transversus* spec. nov. (p. 192)
8. Scutellum wider, lateral carina absent anteriorly or indistinct; hypopygium yellowish or white; occipital carina laterally present only; length of ovipositor sheath about equal to length of hind tibia . . . . *townesi* Haeselbarth (p. 193)
— Scutellum rather narrow[1]), lateral carina distinct anteriorly (Fig. 289); hypopygium brownish; occipital carina usually complete, sometimes medio-dorsally weakly developed; length of ovipositor sheath usually about 0.8 times length of hind tibia . . . . *schwenkei* Haeselbarth (p. 193)

Key to Palaearctic species of the subgenus *Tarpheion*

1. Antenna tricoloured, 6 apical segments more or less yellowish-white, remaining part brown, yellowish basad; length of ovipositor sheath 0.16 times length of fore wing; hypopygium yellowish; middle lobe of mesoscutum slightly, but distinctly concave anteriorly (Fig. 124); lateral carina of scutellum lamelliform (Fig. 124); pterostigma brownish . . . . *apicalis* spec. nov. (p. 193)
— Antenna bicoloured, apical segments brownish, remaining segments yellowish; length of ovipositor sheath 0.39 times fore wing; hypopygium brownish; middle lobe of mesoscutum evenly convex (Fig. 130); pterostigma yellowish; lateral carina of scutellum weakly developed (Fig. 130) . . *artomandibularis* spec. nov. (p. 194)

Blacus (Tarpheion) cerinus spec. nov. (Fig. 72—79)

Holotype, ♀, length of body and of fore wing 3.0 mm.

Head. — Antennal segments 23, length of 3rd segment 1.4 times 4th segment, length

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[1]) If scutellum is rounded and less narrowed apicad (Fig. 112) cf. *convexus*.

of 3rd and 4th segments 6.3 and 4.7 times, respectively, length of penultimate segments 1.9—2.0 times their width; dorsal length of eye 2.8 times temple (Fig. 79); POL : Ø ocellus : OOL = 4 : 3 : 7; frontal suture absent; area in front of occipital carina finely crenulate; malar space equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.2 times its height; side of pronotum reticulate except for dorsal third; zone behind prepectal carina almost smooth; epicnemial suture almost smooth except for some superficial rugae; precoxal suture narrowed anteriorly, with distinct rugae (Fig. 72); metapleural flange large, blunt; notauli deep, with widely spaced crenulae; mesoscutal lobes flattened dorsally, middle lobe somewhat concave anteriorly (Fig. 75); lateral carina of scutellum complete, distinctly developed; dorsal surface of propodeum smooth except for lamelliform carinae, apical surface reticulate (Fig. 73).

Wings. — First discoidal cell widely truncate anteriorly; parastigma large, but weakly developed; d 1 : d 2 = 9 : 23; r 1 slightly longer than width of pterostigma.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.6, 9.8 and 10.0 times their width, respectively; fore tarsal claw with long, blackish bristles and teeth (Fig. 77); middle and hind claws simple; hind coxa rugose dorso-basally.

Metasoma. — Length of 1st tergite 2.1 times its apical width, surface with widely spaced rugae, medially superficially rugose (Fig. 73), dorsal carinae distinctly developed in basal three-fifths, spiracle flat; basal four-fifths of 2nd tergite with widely spaced striae (Fig. 73), remaining smooth; length of ovipositor sheath 0.22 times fore wing.

Colour. — Reddish brown; face, clypeus, labrum, mandible, base of antenna, palpi, tegulae, metasoma ventro-basally, pterostigma and legs, yellowish; hypopygium, yellowish brown; stemmaticum and metasoma apically, blackish.

Holotype ♀ in BM, London: "Brazil, Nova Teutonia, 27°11'B, 52°23'L, 28.vii.1937, Fritz Plaumann, B.M. 1937-656".

Paratype: topotypic, 7.x.1938 (AC), propodeum rather weakly reticulate, ♀.

Note. *B. (T.) cerinus* forms with *constrictus* and the African *annulicornis* a distinct group in *Tarpheion*, characterized by the blackish bristles of the fore claw and the relatively large size.

Blacus (Tarpheion) constrictus spec. nov. (Fig. 80—87)

Holotype, ♀, length of body and of fore wing 2.4 mm.

Head. — Antennal segments 22, length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segment 7.0 and 5.0 times their width, respectively, length of penultimate segments 2.0—2.2 times their width; dorsal length of eye 2.1 times temple; POL : Ø ocellus : OOL = 5 : 4 : 13; frontal suture absent; area in front of occipital carina almost smooth, indistinctly crenulate laterally; length of malar space somewhat less than basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulato-rugose except for dorsal two-fifth; zone behind prepectal carina smooth, except near precoxal suture, crenulate; epicnemial suture smooth; precoxal suture with widely spaced crenulae (Fig. 80); metapleural flange large; notauli deep, with widely spaced crenulae; mesoscutal lobes flattened dorsally, middle lobe somewhat concave anteriorly; lateral carina of scutellum distinct but medially irregular, apically lamelliform and slightly protruding; dorsal surface of propodeum smooth, posterior surface reticulate (Fig. 86).

Wings. — First discoidal cell sharp anteriorly; parastigma large but posterior margin coloured only; d 1 : d 2 = 4 : 9; r 1 somewhat shorter than width of pterostigma (Fig. 84).

Legs. — Length of femur, tibia and basitarsus of hind leg 5.8, 10.8 and 10.0 times its width, respectively; fore tarsal claw with long blackish bristles and teeth (Fig. 81); middle and hind claws simple; hind coxa rugose dorsally.

Metasoma. — Length of 1st tergite 2.1 times its apical width, surface longitudinally striato-rugose, medially rugoso-reticulate, dorsal carinae distinct in basal two-third, spiracle flat (Fig. 86); length of ovipositor sheath 0.19 times fore wing; basal four-fifth of 2nd tergite striato-rugose, remaining smooth.

Colour. — Reddish brown; palpi, base of antenna, antennal sockets, clypeus, labrum, mandible, tegulae, ventral part of prothorax and metasoma antero-ventrally, yellow; hypopygium yellowish brown, somewhat hyaline; legs yellow but coxae and trochanters rather whitish; pterostigma brown, but its basal and apical tips, parastigma largely and metacarp, yellowish white.

Holotype ♀ in BM, London: "Brazil, Nova Teutonia, 27°11'B, 52°23'L, 18.v.1938, Plaumann, B.M. 1938-682".

Paratypes: all topotypic: ♂, allotype, 22 antennal segments, 24.v.1938 (BM); 2 ♀, 25.iv.1936 (AC), 22 antennal segments and iii.1967 (CNC).

Blacus (Tarpheion) chillcotti spec. nov. (Fig. 88—94)

Holotype, ♀, length of body 2.0, length of fore wing 2.3 mm.

Head. — Antennal segments 22 (in ♀ paratypes 20, 21 and 22 (2×), ♂ 22), length of 3rd segment 1.5 times 4th segment, length of 3rd and 4th segments 7.5 and 5.0 times their width, respectively, length of penultimate segments 1.5 times their width; dorsal length of eye 2.2 (—2.5 in paratypes) times temple; POL : Ø ocellus : OOL = 3 : 2 : 5; frontal suture shallow; area in front of occipital carina remotely crenulate; length of malar space somewhat longer than basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum rugoso-reticulate except for dorsal third; zone behind prepectal carina finely crenulate; epicnemial suture almost smooth; precoxal suture reticulate, wide medially (Fig. 88); metapleural flange distinct; notauli deep, crenulate; mesoscutal lobes moderately convex; lateral carina of scutellum strongly developed, complete; propodeum smooth dorsally, reticulate posteriorly (Fig. 94).

Wings. — First discoidal cell truncate anteriorly; parastigma large; d 1 : d 2 = 9 : 17.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.4, 10.5 and 8.0 times their width, respectively; all claws simple; hind coxa coriaceous.

Metasoma. — Length of 1st tergite 1.5 (—1.7 in paratypes) times its apical width, surface densely covered with fine, longitudinal (and somewhat reticulate) rugae (Fig. 94), dorsal carinae distinct in basal third, spiracle flat; 2nd tergite finely striate, except for apical corners; length of ovipositor sheath 0.29 times fore wing.

Colour. — Reddish brown; head dorsally and posteriorly, antenna apically and metasoma, dark brown; pterostigma brown; basal segments of antenna, palpi and legs, yellowish.

Holotype ♀ in CNC, Ottawa: "Whiteside Mt., Highlands, N.C., 20.vii.1957", "collector J. G. Chillcott".

Paratypes: Looking Glass Rock nr. Pisgah Forest, North Carolina, 2500 ft, 19.vii.1957, 2 ♀ (CNC, AC); Moorestown, New Jersey, viii.1.1939 (USNM), ♀; Pine Mtn., Georgia, 3000 ft, 26.vii.1957 (allotype, CNC), antennal segments 22, and 2nd tergite striate basally only; Dundas, Ontario, 7-11.vii.1972, ♀ (CNC).

This species is dedicated to the late Dr. J. G. Chillcott, who collected many interesting and nicely preserved specimens.

Blacus (Tarpheion) erugatus spec. nov. (Fig. 95—101)

Holotype, ♀, length of body 1.9, length of fore wing 2.0 mm.

Head. — Antennal segments 22 (also in 3 paratypes, but 2 paratypes have 21, 1 has 20 and 1 has 23; the only known ♂ has left 20 and right 19 segments), length of 3rd segment 1.5 times 4th segment, length of 3rd and 4th segments 5.3 and 3.9 times their width, respectively, length of penultimate segments twice their width; dorsal length of eye 2.9 (—3.3 times in paratypes) temple; POL : Ø ocellus : OOL = 3 : 2 : 5; frontal suture superficial; area in front of occipital carina finely crenulate; length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum with widely spaced rugae, except in dorsal 0.3 (Fig. 95); zone behind prepectal carina crenulate; epicnemial suture superficially rugose, almost smooth; precoxal suture almost smooth, except for some rugae (Fig. 95); metapleural flange distinct; notauli superficially crenulate; mesoscutal lobes rather flat; lateral carina of scutellum complete, distinct; propodeum almost smooth dorsally, reticulate posteriorly (Fig. 101).

Wings. — First discoidal cell truncate anteriorly; d 1 : d 2 = 7 : 16; parastigma large but weakly developed.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.2, 10.6 and 8.3 times their width, respectively; all claws simple; hind coxa almost smooth, with some superficial microsculpture dorsally.

Metasoma. — Length of first tergite 1.8 (—2.0 in paratypes) times its apical width, surface superficially rugoso-striate (Fig. 101), dorsal carinae almost complete, spiracle flat; 2nd tergite smooth, except for some superficial and widely placed microsculpture (Fig. 101) (if more pronounced, as in paratypes, then at most on basal two-thirds of tergite); length of ovipositor sheath 0.38 times fore wing (one paratype: 0.29 times).

Colour. — Reddish brown; basal half of antenna, palpi, head (except stemmaticum) parastigma, tegulae and metasoma ventrally, yellowish; pterostigma, brown; stemmaticum, black.

Holotype ♀ in CNC, Ottawa: "Pompeya, Napo R., Pastaza, EUCAD., 14-22.v.1965, L. Pena". Paratypes: (BM, AC, CNC), 10 ♀ : 1 topotypic; 9 from Brazil, Nova Teutonia, mainly collected in August and September and 3 from Jatai, Golas; 1 ♂, allotype, Brazil, Nova Teutonia, 14.vi.1937 (BM).

Note. This species is closely related to *chillcotti*, but *chillcotti* has a Nearctic and *erugatus* a Neotropical distribution. Because of the variability of *erugatus* only discernable by rather subtile differences.

Blacus (Tarpheion) annulicornis Haeselbarth

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 71—72.

Through the kindness of Dr. Haeselbarth I have a paratype from the type-locality at my disposal. Examined an additional ♀ from BM: "Tanganyika, Mahali Peninsula, 15.ix. 1959, 2nd Oxford U. Exped. B.M. 1960-279", "Kungwe Camp: South ridge. 6,000 ft.". The species is conspicuous by the number of antennal segments, colour of antenna, and blackish bristles of fore claw.

Blacus (Tarpheion) decaryi Granger (Fig. 102—107)

Granger, 1949, Mém. Inst. scient. Madagascar 2A: 331—332, Fig. 342.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.

Holotype, ♂, length of body and of fore wing 2.0 mm.

Head. — Antennal segments 21, length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments 5.5 and 4.0 times their width, respectively, length of penultimate segments ca. 1.5 times their width; dorsal length of eye 0.9 times temple; POL : Ø ocellus : OOL = 8 : 3 : 9; frontal suture absent; area in front of occipital carina finely crenulate; length of malar space about twice basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum with microsculpture except for postero-dorsal smooth area (Fig. 102); area behind prepectal carina smooth; precoxal suture bicurved, with weakly developed crenulae; epicnemial suture smooth; notauli narrow and smooth except for some microsculpture anteriorly, connected with scutellar suture; lateral carina of scutellum complete, weakly developed; propodeum almost smooth dorsally, superficially rugose posteriorly, propodeum evenly sloping.

Wings. — First discoidal cell narrowly truncate anteriorly; d 1 : d 2 = 2 : 9; parastigma large.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.3, 9.4 and 10.0 times their width, respectively; all claws simple; hind coxa superficially rugose dorsally.

Metasoma. — Length of 1st tergite 1.8 times its apical width, surface smooth except for some rugae (Fig. 106), dorsal carinae distinct in basal two-fifths, spiracle protruding; 2nd tergite smooth.

Colour. — Reddish brown; apical half of metasoma darkened; legs and pterostigma, yellowish.

Holotype ♂ in MNHN, Paris: "Madagascar, Amparafaravola, O. du Lac Alaotrai, R. Decary, 1921", "♂, 21", "type".

Note. Because males are difficult to identify, the placing of *decaryi* in *Tarpheion* is uncertain until the ♀ is found. None of the ♀ specimens from Madagascar examined has the aberrantly long malar space, characteristic for this species; also aberrant in *Tarpheion* is the relatively long temple (Fig. 103).

Blacus (Tarpheion) convexus spec. nov. (Fig. 108—113)

Holotype, ♀, length of body and of fore wing 2.1 mm.

Head. — Apical antennal segments broken off; length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments 6.3 and 4.5 times their width, respectively; dorsal length of eye 1.9 times temple; POL : Ø ocellus : OOL = 5 : 4 : 11; frontal suture absent; area in front of occipital carina nearly smooth; length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum smooth, except for some carinae; zone behind prepectal carina distinctly crenulate; epicnemial suture smooth; precoxal suture crenulate apically only (Fig. 108); metapleural flange medium-sized; notauli completely crenulate; mesoscutal lobes rather convex; lateral carina of scutellum distinct, complete; propodeum smooth, except for distinct carinae (Fig. 113).

Wings. — First discoidal cell nearly sharp anteriorly; d 1 : d 2 = 3 : 23; parastigma large but weakly developed.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.0, 12.7 and 14.0 times their width, respectively; all claws simple; hind coxa smooth.

Metasoma. — Length of 1st tergite 1.7 times its apical width, surface superficially and longitudinally rugose (Fig. 113), dorsal carinae distinct in basal half, spiracle almost flat; 2nd tergite with indistinct rugae, almost smooth; length of ovipositor sheath 0.26 times fore wing.

Colour. — Dark reddish brown; clypeus, labrum, mandible, base of antenna, palpi, tegulae and legs, yellowish.

Holotype ♀ in MAC, Tervuren: "Madagascar, Ankaratra, iv.1944, A. Seyrig". Paratypes: 2 ♂ from type-locality, one the allotype, antennal segments 21 and length of 1st metasomal tergite 2.3 times its apical width (MAC, AC); 2 ♂ from Ambositra, Madagascar, ii.1944, 2nd metasomal tergite more distinctly rugose and length of 1st tergite 2.5 times its apical width (MAC).

Note. Closely related to *transversus* and *schwenkei*. *B. convexus* differs from *transversus* by the relatively convex mesoscutal lobes, the less sculptured 2nd metasomal tergite and the shorter ovipositor sheath. It differs from *schwenkei* by the apically relatively truncate scutellum. (Fig. 112 versus Fig. 289) and the less sculptured 2nd metasomal tergite.

Blacus (Tarpheion) nanulus Haeselbarth

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 78.

Small species, superficially similar to *Blacus* (*Ischnotron*) *parvus* Haeselbarth; described from Transvaal, S. Africa.

Blacus (Tarpheion) schimitscheki Haeselbarth (Fig. 291)

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 72—73, Fig. 1.

Size similar to *annulicornis* but the paratypes, kindly given to me by Dr. Haeselbarth, have their fore claw simple and apical segments of antenna brown. Further I have examined 2 ♀ from S. Africa, Pondoland, Sept. 1923 and Aug. 15-31, 1923.

Blacus (Tarpheion) gibber Haeselbarth (Fig. 39)

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 73—74, Fig. 2.

The paratypes given to me by Dr. Haeselbarth differ from *transversus* by the shape and sculpture of 1st metasomal tergite (Fig. 39 versus Fig. 115), the less slender apical segments of antenna, the less distinctly striate 2nd tergite and by the precoxal suture which has more distinct crenulae.

Blacus (Tarpheion) transversus spec. nov. (Fig. 114—119)

Holotype, ♀, length of body 2.1, length of fore wing 2.6 mm.

Head. — Apical segments of antenna broken off; length of 3rd antennal segment 1.3 times 4th segment; length of 3rd and 4th segments 6.5 and 4.5 times their width, respectively, penultimate segments ca. twice their width; dorsal length of eye 2.6 times length of temple; POL : Ø ocellus : OOL = 7 : 4 : 12; area in front of occipital carina virtually smooth; length of malar space somewhat more than basal width of mandible.

Mesosoma. — Length of mesosoma 1.2 times its height; side of pronotum smooth, except for some carinae (Fig. 114); zone behind prepectal carina crenulate; precoxal suture with widely spaced crenulae, short; metapleural flange small; notauli distinctly crenulate; mesoscutal lobes scarcely convex, flattened apicad; lateral carina of scutellum complete; propodeum nearly smooth (Fig. 115).

Wings. — First discoidal cell rather truncate anteriorly; d 1 : d 2 = 1 : 15; parastigma large.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.0, 11.7 and 11.0 times their width, respectively; all claws simple; hind coxa smooth.

Metasoma. — Length of 1st tergite 1.8 times its apical width, surface smooth, except for some rugae medio-apically (Fig. 115), dorsal carinae nearly reach apex, spiracle flat; 2nd tergite with strongly developed, sloping striae; length of ovipositor sheath 0.43 times fore wing.

Colour. — Dark reddish brown; pterostigma (except whitish base), brown; head largely (except for 3 dark spots of stemmaticum) brownish yellow; basal half of antenna, tegulae, palpi and legs, pale yellow.

Holotype ♀ in MAC, Tervuren: "Madagascar, La Mandraka, ii.1944, A. Seyrig". Paratypes: 2 ♂ from type-locality (MAC, allotype; AC); essentially as ♀; antennal segments 22, antenna dark brownish, but 2nd and 14th-20th segments yellowish and 1st metasomal tergite more rugose, as propodeum posteriorly.

Blacus (Tarpheion) townesi Haeselbarth

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 76—77, Fig. 4.

The types are from S. Africa; I have seen 13 ♀ specimens from Port St. John, Pondoland, S. Africa, R. E. Turner, July 10-31, 1923 (8), Aug. 15-31, 1923 (3), Nov. 1923 (1) and Dec. 1923 (1), all with 21 antennal segments (BM, AC).

Blacus (Tarpheion) schwenkei Haeselbarth (Fig. 289, 290)

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 75—76, Fig. 3.

The specimens excluded from the type-series by Haeselbarth (1974: 76) may partly belong to *convexus*; they are from S. Africa, while *convexus* is described from Madagascar; in any case this species is closely related to *convexus*.

Blacus (Tarpheion) apicalis spec. nov. (Fig. 120—126)

Holotype, ♀, length of body and of fore wing 1.5 mm.

Head. — Antennal segments 20 (as paratypes); length of 3rd segment 1.6 times 4th segment, length of 3rd and 4th segments 6.0 and 3.6 times their width, respectively, length of penultimate segments 1.8—2.0 times their width; dorsal length of eye 1.9 times temple; POL : Ø ocellus : OOL = 5 : 3 : 9; frontal suture absent; area in front of occipital carina smooth; length of malar space ± 1.3 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum smooth, except for some widely spaced reticulation in ventral half (Fig. 120); zone behind prepectal carina crenulate; epicnemial suture smooth; precoxal suture with some crenulae in middle part (Fig. 120); metapleural flange distinct; notauli with some widely spaced crenulae; mesoscutal lobes moderately convex, its middle lobe slightly concave anteriorly (Fig. 124); lateral carina of scutellum lamelliform, complete, truncate apically (Fig. 124); propodeum smooth except for some indistinct microsculpture.

Wings. — First discoidal cell narrowly truncate anteriorly; d 1 : d 2 = 3 : 23; parastigma medium-sized; r 2 somewhat bent.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.6, 10.0 and 11.0 times their width, respectively; all claws simple; hind coxa smooth.

Metasoma. — Length of 1st tergite 2.1 (—2.3 in paratypes) times its apical width, surface rather superficially reticulato-rugose in middle of apical half, remaining surface almost smooth (Fig. 126), dorsal carinae distinct in basal two-thirds, spiracle flat; part of 2nd tergite superficially rugose (Fig. 126); length of ovipositor sheath 0.16 times fore wing.

Colour. — Metacarp, tegulae, legs and head, yellowish; mesosoma, reddish brown (but propodeum more brownish); pterostigma, most veins and metasoma brown, but 2nd and 3rd segments and hypopygium, more yellowish white; stemmaticum, black; palpi and 6 apical segments of antenna, yellowish white; 10 middle segments of antenna, brown and its 4 basal segments, yellowish (in paratypes usually more extended).

Holotype ♀ in BM, London: "Swept from dwarf bamboos in deep ravine, c. 2000′, 12.xii.1961", "Arun Valley above River Sabhaya east shore", "Brit. Mus. East Nepal Exp. 1961-62. R. L. Coe Coll. B.M. 1962-177". Paratypes: 11 ♀, all topotypic and same date (BM, AC).

Note. Very distinctive species, well characterized by its tricoloured antenna, small size and concave middle lobe of mesoscutum.

Blacus (Tarpheion) artomandibularis spec. nov. (Fig. 127—133)

Holotype, ♀, length of body 1.8, length of fore wing 2.3 mm.

Head. — Antennal segments 20 (as in ♀ paratype); length of 3rd segment 1.4 times 4th segment; length of 3rd and 4th segments 4.7 and 3.3 times their width, respectively, length of penultimate segments 1.9—2.1 times their width; dorsal length of eye 2.0 times length of temple; POL : Ø ocellus : OOL = 6 : 3 : 10; frontal suture absent; area in front of occipital carina smooth; length of malar space 1.2 times basal width of mandible; species named after the mandible because it is so distinctly narrowed apicad.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum sparsely reticulate; zone behind prepectal carina crenulate; epicnemial suture smooth; precoxal suture with widely spaced crenulae (Fig. 127); metapleural flange medium-sized; notauli with rather closely placed, fine crenulae; mesoscutal lobes distinctly convex; lateral carina of scutellum rather weakly developed, especially medially indistinct, slightly protruding apically (Fig. 127, 130); propodeum smooth dorsally, superficially rugose posteriorly.

Wings. — First discoidal cell narrowly truncate anteriorly; d 1 : d 2 = 5 : 20; parastigma medium-sized.

Legs. — Length of femur, tibia and basitarsus of hind leg 7.6, 11.8 and 10.5 times their width, respectively; all claws simple; hind coxa smooth.

Metasoma. — Length of 1st tergite 2.2 (—2.4 in ♀ paratype) times its apical width, surface smooth, but medio-apically rugose, dorsal carinae distinct in basal two-thirds, spiracle slightly protruding (Fig. 133); 2nd tergite with some longitudinal striae (Fig. 133); length of ovipositor sheath 0.39 (0.30 in paratype) times fore wing.

Colour. — Reddish brown; stemmaticum and apex of metasoma blackish; legs, palpi, clypeus, labrum, mandible, antenna (except for both brown apical segments), parastigma, cu 2, metacarp, base of metasoma ventrally, tegulae and pterostigma, yellowish.

Holotype ♀ in BM, London: "Taplejung Distr., above Sangu. Mixed vegetation in dried-up ravine, c 6800′, 16.ii.1962", "Brit. Mus., East Nepal Exp. 1961-62, R. L. Coe Coll. B. M. 1962-177". Paratype: 1 ♀, topotypic, c 6200′, 25-28.x.1961, old mixed forest (AC) (pterostigma dark brown).

Note. Related to *convexus* and *transversus* from Madagascar, but *artomandibularis* is distinguished from *convexus* by the 1st tergite which is less dilated posteriorly. From *transversus* it differs by the less transverse head (Fig. 131 versus Fig. 119) and the less sculptured 2nd metasomal tergite.

Contochorus subgen. nov.

(Fig. 134—140)

Etymology: From "kontos" (Greek for short) and from "chora" (Greek for room or space) because of the short medial area of the propodeum; gender, neuter.

Type-species: *Blacus glabrum* spec. nov.

Diagnosis. — Small, antennal segments of ♀ 17, of ♂ 16; eye setose; occipital carina complete, with widely spaced crenulae; scutellar suture deep, wide, with one longitudinal basal width of mandible; malar suture distinct; epicnemial suture smooth; precoxal suture smooth, shallow depression only; metapleural flange rather small but distinct; notauli complete, with widely spaced crenulae; scutellar suture deep and wide, one longitudinal carina; scutellum smooth, its lateral carina complete, lamelliform (Fig. 135), slightly protruding apically (Fig. 134), its side rugose; dorsal surface of propodeum distinctly longer than posterior surface (Fig. 134), its medial carina divided, forming a short, quadrate, medial area (Fig. 136); propodeal tubercle absent; pterostigma slender, proximal part concave posteriorly; r 1 distinctly longer than width of pterostigma (Fig. 137); parastigma small; subdiscoideus almost straight; 1st discoidal cell narrowly truncate anteriorly; d 1 : d 2 = 1 : 5; metacarp not distinctly surpassing radial cell; length of hind femur 7.0 times its width; hind coxa almost smooth; fore and middle claws of ♀ with rather short, blackish bristles, hind claw simple; length of ovipositor sheath 0.11 times fore wing; ovipositor straight; hypopygium medium-sized; metasoma compressed in apical half.

Distribution. — Palaearctic: one species.

Note. *Contochorus* has much in common with *Leioblacus*, but essential differences are the following apomorphous characters of *Contochorus*: 1 — ovipositor short; 2 — medial area of propodeum short, quadrate; 3 — dorsal surface of propodeum relatively long; 4 — blackish bristles of fore and middle claws of ♀; 5 — malar suture present; 6 — eye setose.

Both subgenera have the following apomorphous characters in common: 1 — precoxal suture more or less smooth; 2 — pterostigma slender, with proximal inner side concave; 3 — compressed and slender metasoma.

Blacus (Contochorus) glabrum spec. nov. (Fig. 134—140)

Holotype, ♀, length of body 1.3, length of fore wing 1.5 mm.

Head. — Antennal segments 17 (as in 4 paratypes, 16 in ♂ paratype), length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 4.5 and 3.7 times their width, respectively, length of penultimate segments 1.2 and 1.5 times their width; dorsal length of eye 1.1 times length of temple (Fig. 140); POL : Ø ocellus : OOL = 4 : 2 : 5; area in front of occipital carina finely crenulate; apical margin of clypeus straight medially.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum smooth, except for two longitudinal carinae in basal half and some shallow depressions (Fig. 134); zone behind prepectal carina finely crenulate; mesoscutal lobes moderately convex; dorsal surface of propodeum superficially rugose.

Wings. — Nervulus and nervellus short; length of r 1 about 1.5 times width of pterostigma.

Legs. — Length of femur, tibia and basitarsus of hind leg 7.0, 11.2 and 6.5 times their width, respectively.

Metasoma. — Length of 1st tergite 2.6 times its apical width, surface superficially rugose, dorsal carinae distinct in whole length, spiracle protruding (Fig. 136).

Colour. — Brown; part of clypeus, labrum, mandible and metasoma baso-ventrally, yellowish; pterostigma, 2nd and 3rd metasomal tergites, tegulae and base of antenna more brown; legs yellowish but hind femur and tibia brownish except for their bases.

Holotype ♀ in BM, London: "Taplejung Distr., Sangu, c 6200′. Mixed vegetation by stream in gully, ix-x.1961", "Brit. Mus. East Nepal Exp., 1961-1962, R. L. Coe Coll. B.M. 1962-177". Paratypes: 1 ♀, topotypic (AC); 2 ♂, one the allotype, by stream in shady ravine, below Sangu, 30.x.1961, further as holotype labels (BM, AC) (parastigma enlarged); 2 ♀, topotypic, ca. 6000′ (by stream in shady ravine, 30.x.1961) and ca. 6800′ (mixed vegetation in dried-up ravine, 16.ii.1962) (BM); 1 ♀, "Arun Valley: East shore of R. Arun below Tumlingtar, c 1800′, 14-23.xii.1961", "Evergreen shrubs bordering dry stream-beds" (AC).

Ganychorus Haliday, subgenus
(Fig. 1—8, 10, 11, 141—248)

Haliday, 1835, Ent. Mag. 3: 39—40.

Type-species: *Bracon ruficornis* Nees.

Diagnosis. — Length of body 1.8—4.5, length of fore wing 1.7—4.5 mm; antenna segments of ♀ 15—25, but usually 19—21; eye usually bare, but sometimes with a few setae or distinctly setose; occipital carina complete, usually strongly developed; clypeus smooth, sometimes with some lateral irregularities (in *dilaticornis*), its apical margin straight medially; frons and vertex smooth or finely striate; face smooth, at most superficially rugose; length of malar space 1.1—2.5 times basal width of mandible; malar suture absent or present; precoxal suture present, with closely spaced striae (Fig. 156) or with widely spaced crenulae (Fig. 149) or a combination of both (Fig. 197); metapleural flange distinct, sharp or blunt, medium-sized to large; notauli complete, more or less deep; scutellar suture wide, deep, with one distinct longitudinal carina in all Nearctic and Neotropical species; scutellum smooth or transversely rugose (Fig. 152), its lateral carina well developed, complete, often lamelliform, more or less protruding apically in several species; side of scutellum rugose, seldom more reticulate; parastigma small or enlarged (Fig. 170), the latter especially in ♂; 1st discoidal cell truncate anteriorly, or sharp or even petiolate; d 1 : d 2 = 1 : 1.0—3.4; metacarp not distinctly surpassing radial cell; r 2 straight or nearly so, only in *strictus* bent; length of hind femur 5.2—8.5 times its width; hind coxa rugose dorsally or almost smooth; fore claw of ♀ always and middle claw often and hind claw seldom with blackish bristles and teeth (Fig. 229); propodeal tubercle usually absent, if present then small (Fig. 141); propodeal carinae at least dorsally distinctly developed; medial carina of propodeum undivided, seldom divided, then on posterior surface a narrow area (Fig. 155); ovipositor straight or slightly bent, only in *strictus* bent dorsad; length of ovipositor sheath 0.14—0.21 times for wing; metasoma after 1st tergite smooth or superficially microsculptured; hypopygium small.

Distribution. — Holarctic: two species; Palaearctic: 15 species; Nearctic: three species; Neotropical: three species (and one species in both Nearctic and Neotropical regions); Ethiopian: four species; Oriental: one species.

Note. Important apomorphous characters are: 1 — lateral carina of scutellum complete, often lamelliform; 2 — fore (and often middle) claw of ♀ with blackish bristles and teeth; 3 — medial carina of propodeum undivided, seldom divided and forming a narrow area; 4 — 2nd metasomal tergite smooth or nearly so; 5 — ovipositor short.

Key to Nearctic and Neotropical species of the subgenus *Ganychorus*

1. Propodeal tubercle small, but distinct (Fig. 141). (Apex of tibia and base of hind leg infuscated; head narrowed ventrad (Fig. 145); length of 1st metasomal tergite 1.4—1.6 times its apical width; discoidal cell (sub-)petiolate, sharp anteriorly; lateral carina of scutellum somewhat protruding (Fig. 141)) . . . . *cracentis* spec. nov.[1]) (p. 201)

— Propodeal tubercle absent, sometimes carinae somewhat protruding 2

2. Medial carina of propodeum divided apically, forming a rather narrow 3rd area on posterior surface of propodeum (Fig. 155); apical half of hind femur more or less brown; 1st metasomal tergite 2.2 times its apical width (Fig. 155); antennal segments of ♀ 23—24, of ♂ 22 . . . . *fissus* spec. nov. (p. 202)

— Medial carina of propodeum undivided, posterior surface of propodeum with 2 large areas, some specimens of *ruficornis* may have the medial carina rather weakly developed, being part of a more or less reticulate area on posterior surface of propodeum, but these specimens have usually 20, seldom 19 or 21 antennal segments; 1st metasomal tergite 1.4—1.8 times its apical width; hind leg yellow 3

3. Hind femur and tibia equally yellowish; antenna rather slender (Fig. 156); wings normally developed 4

— Hind femur and/or tibia more or less darkened, brownish; antenna and wings variable 5

4. Length of 1st metasomal tergite of ♀ 1.4—1.8 times its apical width, distinctly widened apicad (Fig. 161); malar space slightly longer than base of mandible;

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[1]) Males with distinct propodeal tubercle and scutellum superficially reticulate, see subgenus *Hysterobolus*.

lateral carina of scutellum slightly protruding (Fig. 156); pterostigma of ♂ enlarged (Fig. 170) . . . . *ruficornis* (Nees) (p. 203)

— Length of 1st tergite of ♀ 2.2 times its apical width, sides parallel apicad (Fig. 169); lateral carina of scutellum distinctly protruding (Fig. 163); length of malar space 2.5 times base of mandible; ♂ unknown . . . . . *armatulus* Ruthe (p. 204)

5. Mesosoma red; hind femur completely dark brown; length of hind tibia 13.3 times its width; length of 3rd antennal segment 5.8 times its width (Fig. 176); length of 1st tergite 2.1 times its apical width (Fig. 181) . *thoracicus* spec. nov. (p. 205)

— Mesosoma yellowish, brown or blackish; hind femur partly yellowish, seldom completely infuscated; length of hind tibia 9.0—10.0 times its width; length of 3rd antennal segment 3.3—4.2 times its width (Fig. 199, 213); length of 1st tergite 1.3—2.5 times its apical width (Fig. 188, 205) 6

6. Antenna strongly dilated medially, width of 11th segment twice width of 3rd segment (Fig. 182), apex yellowish; length of 1st metasomal tergite 2.5 times its apical width (Fig. 188) . . . . *dilaticornis* spec. nov. (p. 206)

— Antenna not or scarcely dilated medially (Fig. 213), apex darkened or yellowish; length of 1st tergite 1.3—2.1 times its apical width (Fig. 191, 205, 219) . . . 7

7. Lateral carina of scutellum raised apically (Fig. 206, 213); length of 1st tergite 1.7—2.0 times its apical width, slightly widened apically (Fig. 219); hind femur submedially yellowish (Fig. 209, 217); usually penultimate segments of antenna of ♀ yellowish; micropterous form unknown 8

— Lateral carina not raised apically, or indistinctly (Fig. 197); length of 1st tergite 1.3—1.4 times its apical width, distinctly widened apically (Fig. 205); hind femur less darkened but medially not different from subapical region; penultimate segments of antenna of ♀ infuscated; micropterous form occurs (Fig. 189) . . . . *striatus* spec. nov. (p. 207)

8. Dorsal length of eye 1.1 times length of temple (Fig. 212); eyes in frontal aspect less protruding (Fig. 208); length of ovipositor sheath 0.18—0.20 times fore wing; 2nd metasomal tergite reddish brown; parastigma of ♂ as ♀, not enlarged . . . . *collaris* (Ashmead) (p. 208)

— Dorsal length of eye 1.4—1.6 times length of temple (Fig. 214); eyes in frontal aspect distinctly protruding (Fig. 216); length of ovipositor sheath 0.12—0.14 times fore wing; 2nd metasomal tergite yellowish; parastigma of ♂ enlarged as compared to ♀ . . . . *epitolus* spec. nov. (p. 209)

Key to Ethiopean species of the subgenus *Ganychorus*

1. Malar space slightly longer than basal width of mandible; hind femur yellowish brown; 1st metasomal tergite slightly shorter than twice its apical width . . . . *dracomontanus* Haeselbarth (p. 210)

— Length of malar space 1.7—2.0 times basal width of mandible; hind femur largely dark brown or yellowish brown; shape of 1st tergite usually different (Fig. 255, 248) 2

2. Subdiscoideus almost straight (Fig. 175), sometimes somewhat bent basally; notauli shallow, smooth; lateral carina of scutellum protruding apically; length of 1st metasomal tergite 2.2—2.4 times its apical width (Fig. 171) . . . . *genalis* Haeselbarth (p. 210)

— Subdiscoideus distinctly bent proximally (Fig. 221, 244); notauli deep, crenulate basally; lateral carina of scutellum variable; length of 1st tergite 1.3—1.9 times its apical width (Fig. 225, 248) 3

3. Length of 1st tergite 1.3 times its apical width, distinctly dilated apicad (Fig. 225); lateral carina of scutellum not protruding apically (Fig. 220); length of ovipositor sheath 0.21 times fore wing; antenna less slender (Fig. 220) . . . . *haeselbarthi* spec. nov. (p. 210)

— Length of 1st tergite 1.9 times its apical width, scarcely dilated apicad (Fig. 248); lateral carina of scutellum protruding apically (Fig. 242); length of ovipositor sheath 0.15 times fore wing; antenna relatively slender (Fig. 242) . . . . *stami* spec. nov. (p. 215)

Key to Palaearctic species of the subgenus *Ganychorus* (modified after Haeselbarth, 1973a and 1973b)

1. Antennal segments of ♀ 15, of ♂ 16; ovipositor short, scarcely protruding behind metasoma, slightly bent upwards . . . . *strictus* Stelfox (p. 211)

— Antennal segments of ♀ 17 or more, of ♂ 19 or more; ovipositor longer, distinctly protruding, slightly bent ventrad or straight 2

2. Propodeal tubercle present; antennal segments of ♀ 17—19; middle claw simple 3

— Propodeal tubercle absent; antennal segments of ♀ 19 or more; usually middle claw with blackish bristles 4

3. Scutellum smooth; antennal flagellum of equal width (Fig. 25 in Haeselbarth, 1973a); length of malar space almost twice basal width of mandible; antennal segments of ♀ 17 . . . . *varius* Haeselbarth (p. 211)

— Scutellum superficially rugose; antennal flagellum more slender basally (Fig. 16 in Haeselbarth, 1973a); malar space almost 1.5 times basal width of mandible; antennal segments of ♀ 17—19 . . . . *nixoni* Haeselbarth (p. 211)

4. First metasomal tergite scarcely widened apicad; antennal segments of ♀ 19—20; lateral carina of scutellum lamelliform, distinctly protruding apically 5

— First metasomal tergite distinctly widened apicad, especially in ♀ (but *apaches* rather is a borderline case); lateral carina of scutellum usually less protruding and lamelliform, or antennal segments of ♀ 23—25 6

5. Scutellum distinctly rugose; antennal segments of ♀ 20; length of malar space about 2.5 times basal width of mandible (Fig. 164); wings narrow (Fig. 165) . . . . *armatulus* Ruthe (p. 204)

— Scutellum smooth or indistinctly rugose; antennal segments of ♀ 19, seldom 20; length of malar space somewhat shorter than twice basal width of mandible; wings wider (Fig. 31 in Haeselbarth, 1973a) . . . . . *tripudians* Haliday (p. 212)

6. Hind femur more or less dark brown or blackish subapically, scarcely defined; antennal segments of ♀ 20 7

— Hind femur brownish yellow, infuscated area wanting; antennal segments of ♀ 19—25 11

7. Length of 4th antennal segment about twice its width (Fig. 18 in Haeselbarth, 1973a); scutellum usually smooth; frons finely striate dorsally; propodeum almost cubical, in lateral aspect angle between dorsal and posterior surface 95—100°; fresh specimens blackish, even hind femur may be blackish . . . . *maculipes* Wesmael (p. 212)

— Length of 4th antennal segment 2.5—3.0 times its width; scutellum and frons variable; angle between dorsal and posterior surface 105—120°; fresh specimens partly more or less brownish 8

8. Hind claw of ♀ with blackish bristles and teeth (Fig. 11 in Haeselbarth, 1973a); scutellum superficially transversely rugose; antennal flagellum of equal width (Fig. 17 in Haeselbarth, 1973a); nominate subspecies is micropterous, from Ireland only; subspec. *macropterus* Haeselbarth from Europe, except Ireland . . . . *ambulans* Haliday (p. 212)

— Hind claw of ♀ without blackish bristles or teeth; scutellum and antenna variable 9

9. Scutellum rather distinctly rugose; frons distinctly and finely striate dorsally; antennal flagellum of ♀ of equal width (Fig. 19 in Haeselbarth, 1973a) . . . . *koenigsmanni* Haeselbarth (p. 212)

— Scutellum smooth; frons smooth or indistinctly striate; antennal flagellum slightly widened apicad (Fig. 1 in Haeselbarth, 1973b) 10

10. Frons smooth; antenna somewhat shorter and less slender (Fig. 24 in Haeselbarth, 1973a); mesopleura less sculptured; usually macropterous . . . . *diversicornis* (Nees) (p. 212)

— Frons indistinctly striate; antenna somewhat longer and more slender (Fig. 1 in Haeselbarth, 1973b); mesopleura almost completely and distinctly striate; usually micropterous . . . . *kaszabi* Haeselbarth (p. 212)

11. Antennal segments of ♀ 23—25, of ♂ 25—26; length of fore wing 4.0—4.5 mm . . . . *pallipes* Haliday (p. 213)

— Antennal segments of ♀ 19—20, of ♂ 20—23; length of fore wing seldom exceeding 3.0 mm 12

12. Antennal segments of ♀ 20; hind coxa usually completely yellowish; 1st discoidal cell relatively stout, somewhat wider than long (Fig. 32 and 35 in Haeselbarth, 1973a) 13

— Antennal segments of ♀ 19; hind coxa at least brownish dorsally; 1st discoidal cell relatively slender, somewhat longer than wide (Fig. 30, 34 in Haeselbarth, 1973a) 16

13. Middle claw simple; fresh specimens completely black; length of basal vein about 1.6 times length of cu 1 (Fig. 32 in Haeselbarth, 1973a); occipital carina distinctly arched; antenna slender (Fig. 20 in Haeselbarth, 1973a) . . . . *nitidus* Haeselbarth (p. 213)

— Middle claw with blackish bristles and teeth; fresh specimens partly brownish; basal vein about 1.2—1.4 times length of cu 1 (Fig. 228); occipital carina relatively straight; antenna less slender 14

14. Length of 1st metasomal tergite 2.0—2.1 times its apical width, apical width distinctly less than twice its minimum width (Fig. 232); precoxal suture relatively remotely covered with rugae (Fig. 227) . . . . . *apaches* spec. nov. (p. 213)

— Length of 1st tergite 1.4—1.8 times its apical width, apical width twice its minimum width (Fig. 161); precoxal suture closely covered with fine rugae (Fig. 156) . 15

15. Hind claw with long, blackish bristles (Fig. 9 in Haeselbarth, 1973a); wing somewhat brownish; antenna somewhat more stout (Fig. 15 in Haeselbarth, 1973a); angle between dorsal and posterior surface of propodeum ca. 115—120° . . . . *pectinatus* Haeselbarth (p. 214)

— Hind claw almost simple, at most with medium-sized, yellowish setae (Fig. 8 in

Haeselbarth, 1973a); wing almost hyaline; antenna somewhat more slender (Fig. 158); angle between dorsal and posterior surface of propodeum ca. 130° . . . . *ruficornis* (Nees) (p. 203)

16. First discoidal cell sharp anteriorly (Fig. 30 in Haeselbarth, 1973a); rugae of precoxal suture distinct near prepectal carina; scutellum slightly convex; frontal suture indistinctly developed . . . . *conformis* Wesmael (p. 214)

— First discoidal cell narrowly truncate anteriorly (Fig. 34 in Haeselbarth, 1973a); rugae of precoxal suture indistinct or absent near prepectal carina; scutellum moderately convex; frontal suture distinctly developed . . *capeki* Haeselbarth (p. 214)

Blacus (Ganychorus) cracentis spec. nov. (Fig. 141—148, 173, 174)

Holotype, ♀, length of body 2.0 mm (paratypes: 2.4—2.6 mm); length of fore wing 2.2 mm (paratypes: 2.5—3.0).

Head. — Antennal segments 19 (paratypes: 20) (Fig. 143), length of 3rd segment 1.6 times 4th segment (paratypes: 1.5—1.6 times), length of 3rd and 4th segments 5.7 and 4.0 times their width, respectively (paratypes 4.3—5.6 and 2.7—3.5 times, respectively), length of penultimate segments ca. 1.5 times their width; area in front of occipital carina narrowly crenulate; eye bare (in paratype with some setae); frontal suture indistinct (but distinct in paratypes); frons and vertex smooth; POL : Ø ocellus : OOL = 8 : 3 : 9; dorsal length of eye 0.8 times temple (Fig. 145); face smooth (but superficially rugose in paratypes); length of malar space 1.8 times basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.3 (paratypes: 1.4) times its height; side of pronotum reticulate, except for medio-dorsal two-fifths (Fig. 141); zone behind prepectal carina widely spaced crenulate; epicnemial suture almost smooth; precoxal suture with some short rugae (Fig. 141); metapleural flange blunt; notauli deep, narrowly crenulate anteriorly only (Fig. 146); mesoscutal lobes convex; scutellum almost smooth, its lateral carina lamelliform, somewhat protruding apically (Fig. 141); propodeal tubercle small, but distinct, rather blunt and situated low (Fig. 141); surface of propodeum almost smooth, except for undivided medial and both lateral carinae.

Wings. — First discoidal cell sharp, subpetiolate anteriorly (Fig. 144); d 1 : d 2 = 4 : 7 (—10 in paratypes); parastigma small.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.6, 11.8 and 10.0 times their width, respectively (paratypes: 5.2—5.6, 10.4—11.0 and 9.0—10.0 times, respectively); fore tarsal claw with rather short, brownish bristles, which in two paratypes are blackish; middle and hind claws simple.

Metasoma. — Length of 1st tergite 1.6 (paratypes: 1.4—1.5) times its apical width, longitudinally rugose, dorsal carinae distinct in basal third (Fig. 147), spiracle flat; length of ovipositor sheath 0.17 times fore wing (3 paratypes measured: 0.10, 0.14, and 0.19 times, respectively).

Colour. — Blackish brown; metasoma after 1st tergite and basal half of antenna, yellowish brown; base of pterostigma and parastigma, whitish; mandible, tegulae, palpi and legs, brownish yellow; apex of femur, telotarsi and base of tibia of hind leg infuscated (Fig. 148).

Holotype ♀ in CNC, Ottawa: "Mex. Sin. 4½ mi. W. El Palmito, 6500 ft., 4 Aug. 1964, W. R. M. Mason." Paratypes: 6 ♀, "Mex. Dgo. 9000 ft. El Salto, 10 mi. W., 15 July (1 ♀) and 9 June 1964 (3 ♀) W. R. M. Mason" "Mex., Chis., 7000 ft., 20 mi. N. Bochil, Y. Buena, Cloudfor., Mason, 10 June 1969" (2 ♀). One of the latter has scutellum rugose (CNC, AC), most paratypes larger, more robust specimens, e.g. antenna (Fig. 143), head (Fig. 174) and 1st metasomal tergite (Fig. 173).

Note. Rather variable species, well characterized by lateral carina of scutellum, propodeal tubercles, sharp discoidal cell and colour of hind leg. Closely related to *nixoni*, but *cracentis* has different: colour of hind leg, shape of head anteriorly (Fig. 27 in Haeselbarth, 1973a versus my Fig. 142), antenna relatively longer (length 1.2 times length of body and in examined paratype of *nixoni* 0.8 times) and pterostigma more slender (Fig. 37 in Haeselbarth, 1973a versus my Fig. 144).

Blacus (Ganychorus) fissus spec. nov. (Fig. 149—155)

Holotype, ♀ length of body 2.3, length of fore wing 2.5 mm.

Head. — Antennal segments 24 (23 in paratype), length of 3rd segment 1.8 times 4th segment; length of 3rd and 4th segments 6.0 and 3.3 times their width, respectively, length of penultimate segments 1.7—1.8 times their width; area in front of occipital carina narrowly crenulate; eye bare; frontal suture shallow; frons and vertex smooth; POL : Ø ocellus : OOL = 9 : 5 : 11; dorsal length of eye 1.1 times length of temple (Fig. 153); face smooth; length of malar space 1.2 times base of mandible; malar suture shallow.

Mesosoma. — Length of mesosoma 1.2 times its height; side of pronotum reticulate, except for dorsal two-fifths; zone behind prepectal carina smooth except for some short crenulae; epicnemial suture rather superficially crenulate; precoxal suture with widely spaced crenulae (Fig. 149), mainly in middle part; metapleural flange sharp, distinct; notauli deep and wide, completely crenulate (Fig. 152); mesoscutal lobes rather convex; scutellum transversely rugose, its lateral carina lamelliform, protruding apically; propodeal tubercles absent; propodeum dorsally almost smooth, except for medial and both lateral carinae, its posterior surface widely spaced reticulate, with medial carina divided, medial area relatively narrow dorsally (Fig. 155).

Wings. — First discoidal cell truncate anteriorly; d 1 : d 2 = 4 : 11; parastigma large.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.8, 11.4 and 9.3 times their width, respectively; fore and middle claws with large, blackish bristles; hind claw simple.

Metasoma. — Length of 1st tergite 2.3 times its apical width, superficially reticulato-rugose, dorsal carinae distinct in whole length, about parallel (Fig. 155), spiracle flat; length of ovipositor sheath 0.16 times fore wing.

Colour. — Reddish brown; stemmaticum with black patch; antenna, palpi, face, clypeus, mandible, apical half of 2nd metasomal tergite, metasoma ventrobasally and tegulae, more or less yellowish; pterostigma, brown; legs, yellowish but telotarsi, apical half of hind femur and hind tibia largely, brown (but in paratype hind femur yellowish and hind tibia infuscated only).

Holotype ♀ in BM, London: "Brazil, Nova Teutonia, 27°B, 52—58°L, 25.iii.1938, Fritz Plaumann, B.M. 1938-458". Paratypes: 1 ♀, topotypic, 19.v.1938 (AC) and 1 ♂, allotype, topotypic, 7.vi.1938 (BM) (antennal segments 22).

Note. Closely related to *epitolus* but frontal aspect of head short by shorter malar space (length in *fissus* 1.2 times versus 2.0 times basal width of mandible in *epitolus*), notauli wider and more distinctly crenulate (Fig. 152 versus Fig. 218), antenna of ♀ with more segments (23—24 versus 20) and medial carina of propodeum divided. By the latter character, its transverse head and wide notauli, it comes rather close to *Tarpheion*. The relationship between the two subgenera is indicated in Fig. 21.

Blacus (Ganychorus) ruficornis (Nees) (Fig. 156—162, 170)

Nees von Esenbeck, (1811) 1812, Mag. Ges. nat. Fr. Berl. 5: 18, Fig. (as *Bracon*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 23—24.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 97—99, Fig. 3, 7, 8, 14, 35, 96, 105, 113.
Say, 1836, Boston J. nat. Hist. 1 (3) : 264 (*Microgaster bisstigmata*). Syn. nov.
Hellén, 1958, Fauna Fennica 4: 21 (*Blacus dentatus*).

Description of female. Length of body 2.2—2.6, length of fore wing 2.3—2.7 mm.

Head. — Antennal segments 20 (98.5 % of 182 ♀ counted, 1 % has 21 and 0.5 % has 19), length of 3rd segment 1.3—1.4 times 4th segment, length of 3rd and 4th segments 4.0—5.2 and 3.3—3.8 times their width, respectively, penultimate segments somewhat longer than wide (Fig. 156); area in front of occipital carina crenulate; eye with some short setae, almost bare; frontal suture shallow; frons and vertex smooth; POL : Ø ocellus : OOL = 11 : 3 : 12 (in figured specimen); dorsal length of eye about equal to temple or slightly shorter (Fig. 162); face smooth; malar space slightly longer than basal width of mandible; malar suture usually absent, but in some specimens distinct.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulato-rugose (Fig. 156); zone behind prepectal carina indistinctly crenulate; epicnemial suture superficially micro-striate; precoxal suture superficially micro-striate (Fig. 156), sometimes more rugose or almost smooth; metapleural flange medium-sized, truncate; notauli narrow, anteriorly crenulate, posteriorly rugose (Fig. 160); mesoscutal lobes more or less convex; scutellum smooth, except for some indistinct rugae (Fig. 160), its lateral carina distinct, slightly protruding or rather flat apically (Fig. 156); propodeal tubercle absent; dorsal surface of propodeum superficially rugose, besides having the medial and both lateral carinae, its posterior surface reticulato-rugose, medial carina usually undivided (Fig. 161), but seldom divided and forming a narrow medial area.

Wings. — First discoidal cell more or less narrowly truncate anteriorly (Fig. 158); d 1 : d 2 = 1 : 1.6—2.3; parastigma large (Fig. 158).

Legs. — Length of femur, tibia and basitarsus of hind leg 6.0—7.0, 9.0—11.2 and 9.0—11.0 times their width, respectively; fore and middle tarsal claws with large, blackish bristles; hind claw with small, brownish bristles.

Metasoma. — Length of 1st tergite 1.4—1.8 times its apical width, superficially striato-rugose, dorsal carinae distinct in basal two-fifths, spiracle slightly protruding (Fig. 161); length of ovipositor sheath 0.18—0.20 times fore wing, about as long as 1st tergite (according to Haeselbarth, 1973a, European specimens have ovipositor sheath ca. 1.2 times 1st tergite, but see notes).

Colour. — More or less reddish brown; mandible, palpi, basal half of antenna, tegulae, legs and base of pterostigma, yellowish.

Figured specimen: "Val Marie, Sask., 49°15′, 107°44′, 10.vi.1955, J. R. Vockeroth" (CNC).

Male. — Easily recognizable by enlarged parastigma (Fig. 170); antennal segments 21, of 94.8 % of 114 ♂ counted, 2.6 % have 20 and 2.6 % have 22.

Nearctic specimens examined from: Alaska, Northwest Territories, Yukon Territory, Saskatchewan, British Columbia, Manitoba, Alberta, Ontario, Quebec, Nova Scotia, South Dakota, Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, New York, Maryland, Virginia, North Carolina, Tennessee, Georgia, Louisiana, Washington, Idaho, California, Arizona, Colorado, Texas, and Mexico (5000—9000 ft).

Notes. Common species, swarms (2 ♀ and 9 ♂ specimens examined in SC: "Swarm, Late Sunl., Red Clover field" from Trout Lake, Wis., 20.xx.1918) and is frequently captured at light.

As to be expected, a species with as wide a distribution as *ruficornis* is rather variable, especially in colour and sculpture. European specimens examined are not distinctly different and in my opinion Nearctic specimens also do not form a subspecies. The usually smooth face and the somewhat wider discoidal cell are not a sound base for erecting a subspecies. Also the ovipositor sheath may be somewhat shorter as compared to the 1st tergite, but in examined specimens from München (W. Germany), Wijster (Drente) and Melissant (Zuid-Holland) (both Netherlands) the length of the sheath is 0.17—0.19 times fore wing and 1.0—1.1 times 1st tergite.

The type of *Microgaster bisstigmata* Say, 1836, from Indiana is lost, the short description makes it certain that Muesebeck's view is correct. In USNM male specimens of *ruficornis* (under *bisstigmata*) have a double pterostigma due to the large parastigma.

This is the most common species of the genus in the Netherlands. Specimens examined from: Asperen, Waarder, Meijendel, Melissant (at light) and Oostvoorne (all Zuid-Holland); Haamstede (Zeeland); Putten and Ede (Gelderland); Wijster (Drente) and Schweibergerbos (Zuid-Limburg). Also from Poland, Mirków, nr. Wroclaw. Snellen van Vollenhoven (1873 and 1876) mentioned Driebergen, Amersfoort (both Utrecht) and Waalsdorp (Zuid-Holland).

Additionally I have examined a vividly coloured ♀ from Nepal: "deep river gorge, c. 5200′", "Taplejung Distr.: between Sangu and Tamrang, x-xi.1961" (BM).

Blacus (Ganychorus) armatulus Ruthe (Fig. 163—169)

Ruthe, 1861, Berl. ent. Z. 5: 137.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 16—17.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 111—112, Fig. 22—26.

Described and figured after a ♀ from Innisville. Length of body 2.1, of fore wing 1.9 mm.

Head. — Antennal segments 20, length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments 3.8 and 2.7 times their width, respectively, penultimate segments slightly longer than wide; area in front of occipital carina distinctly crenulate; eye bare; frontal suture absent; frons almost smooth, but vertex near posterior ocelli superficially micro-sculptured (Fig. 166); POL : Ø ocellus : OOL = 7 : 3 : 9; dorsal length of eye equal to temple (Fig. 166); face superficially rugose; malar space 2.5 times basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.3 (1.4 with lateral carina of scutellum) times its height; side of pronotum reticulate (Fig. 163); zone behind prepectal carina crenulate; epicnemial suture striato-rugose as area posterior of it (Fig. 163); precoxal suture rather irregularly striato-rugose, as surroundings; metapleural flange distinct; notauli indistinctly crenulate, rather narrow (Fig. 168); mesoscutal lobes slightly convex, scutellum superficially rugose (Fig. 168), its lateral carina lamelliform, distinctly protruding apically;

propodeal tubercle absent, but carinae somewhat protruding; dorsal surface of propodeum superficially rugose, medial carina undivided, posterior surface spaced reticulate.

Wings. — First discoidal cell narrowly truncate anteriorly, almost sharp; d 1 : d 2 = 7 : 16; parastigma rather small.

Legs. — Length of femur, tibia and basitarsus 6.8, 8.8 and 8.2 times their width, respectively; fore and middle claws with dark bristles; hind claw simple.

Metasoma. — Length of 1st tergite 2.2 times its apical width (2.0 times in specimen from Chatterton), reticulato-rugose, dorsal carinae strong in basal half, confluent at height of spiracles (Fig. 169), spiracle slightly protruding; length of ovipositor sheath 0.19 times fore wing (0.15 times in specimen from Chatterton).

Colour. — Dark brown; pterostigma, 2nd and base of 3rd metasomal tergite, brownish yellow; pronotum, reddish brown; basal half of antenna, mandible, palpi, tegulae and legs (except telotarsi), yellowish.

Examined specimens: "Innisville, Ont., 16.vii.1963, W. R. M. Mason" (CNC), "Chatterton, Ont., 13 mi. N. Belleville, meadow, 11.viii.1969" (AC) and "Ocsa, Turjani-erdö, 1952.x.30, leg. Kaszab". (det. Haeselbarth, 1972, HC).

Notes. The Hungarian specimen has the ovipositor sheath somewhat shorter (length 0.16 times fore wing), hind femur somewhat more brownish yellow and metasoma, except 1st tergite, brownish yellow. This species is not known from the Netherlands.

May be confused with *collaris*, but *armatulus* has a longer face (Fig. 164 versus Fig. 208), an apically less dilated 1st tergite (Fig. 169 versus Fig. 211), a less convex mesoscutum and a superficially rugose scutellum with the carina more protruding apically (Fig. 164 versus Fig. 206).

Blacus (Ganychorus) thoracicus spec. nov. (Fig. 172, 176—181)

Holotype, ♀, length of body and of fore wing 3.7 mm.

Head. — Antennal segments 21 (as in all paratypes), length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 5.8 and 4.8 times their width, respectively, length of penultimate segments twice their width; area in front of occipital carina distinctly crenulate; eye with some setae; frontal suture shallow; frons and vertex smooth; POL : Ø ocellus : OOL = 4 : 3 : 8; dorsal length of eye 1.1 times temple (Fig. 180); face smooth, except for some indistinct rugae; length of malar space nearly twice basal width of mandible; malar suture absent but near eye shallowly depressed (Fig. 179).

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulato-rugose except for small dorsal area (Fig. 176); zone behind prepectal carina crenulate; epicnemial suture smooth, except for some indistinct rugae; precoxal suture rather superficial, rugose (Fig. 176); metapleural flange large; notauli completely crenulate, moderately wide; mesoscutal lobes rather convex; scutellum smooth but with some lateral rugae (Fig. 178), its lateral carina complete, lamelliform, somewhat protruding posteriorly (Fig. 176); propodeal tubercle absent; dorsal surface of propodeum smooth except for the undivided medial and both lateral carinae, its posterior surface areolate (Fig. 181), almost smooth between the carinae.

Wings. — First discoidal cell narrowly truncate anteriorly; d 1 : d 2 = 5 : 17; parastigma large.

Legs. — Length of femur, tibia and basitarsus of hind leg 8.5, 13.3 and 11.6 times their width, respectively; fore and middle claws with black bristles and teeth; hind claw simple.

Metasoma. — Length of 1st tergite 2.1 times its apical width, reticulato-rugose (Fig. 181), dorsal carinae distinct in basal fifth, spiracle slightly protruding; length of ovipositor sheath 0.17 times fore wing.

Colour. — Brown; mesosoma, red; tarsi and antenna (except for scapus and apical segments), yellowish.

Holotype ♀ in CNC, Ottawa: "Mex., Dgo. 14 mi. SW. El Salto, 8000′ [ft], 26 June 1964, W. R. M. Mason". Paratypes: 6 ♀, all from Mexico, topotypic: 26.vi.1964 (2 ♀) and 30.vi.1964 (2 ♀); Dgo., 24.mi.W. La Cuidad, 7000 ft, 4.viii.1964; Chis., 7000 ft, 20 mi. N. Bochil, Y. Buena, Cloudfor., Mason, 10.vi.1969 (CNC, AC).

Note. Near the Palaearctic *tripudians*, but *tripudians* usually has 19 antennal segments, antenna and wings less slender (cf. Fig. 13 and 31 in Haeselbarth, 1973a), 1st discoidal cell narrower, and mesosoma blackish brown.

Blacus (Ganychorus) dilaticornis spec. nov. (Fig. 182—188)

Holotype, ♀, length of body and of fore wing 2.2 mm.

Head. — Antennal segments 20, length of 3rd segment 1.7 times 4th segment, length of 3rd and 4th segments 5.0 and 3.0 times their width, respectively, dilated mediad to twice width of 3rd segment (Fig. 182), length of penultimate segments ca. 1.5 times their width; area in front of occipital carina narrowly crenulate; eye distinctly setose; frontal suture absent; frons and vertex smooth; POL : Ø ocellus : OOL = 6 : 4 : 7; dorsal length of eye 1.2 times temple (Fig. 186); face laterally superficially rugose, with small elevation near protruding sockets of antenna; length of malar space somewhat more than basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulato-rugose except for dorso-apical corner (Fig. 182); zone behind prepectal carina superficially crenulate; epicnemial suture superficially rugose; precoxal suture superficially crenulate (Fig. 182); metapleural flange large; notauli distinctly crenulate, rather wide (Fig. 187); mesoscutal lobes rather flat; scutellum smooth, with some lateral rugae, its lateral carina lamelliform, protruding apically (Fig. 182); propodeal tubercle absent; surface almost smooth (Fig. 188), except for undivided medial and both lateral carinae.

Wings. — First discoidal cell truncate anteriorly; d 1 : d 2 = 11 : 15; parastigma medium-sized.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.3, 10.8 and 8.0 times their width, respectively; fore and middle claws with blackish bristles; hind claw simple.

Metasoma. — Length of 1st tergite 2.5 times its apical width, surface remotely covered with rugae (Fig. 188), dorsal carinae complete, distinctly developed, spiracle scarcely protruding; length of ovipositor sheath 0.17 times fore wing.

Colour. — Reddish brown; tegulae, palpi, clypeus, mandible, maxilla and legs, yellowish, but hind femur (except base), brown, and apex of hind tibia somewhat darkened; antenna, yellowish with segments 6—14, brown.

Holotype in BM, London: "Brasilien Nova Teutonia 27°11′B, 52°23′L, Fritz Plaumann, x.1935", "Brit. Mus. 1937-47". Paratype: "Brazil, Nova Teutonia, 27°B, 52—53°L, 7.vi.1938, Fritz Plaumann" (AC), ♀, antennal segments 20.

Blacus (Ganychorus) striatus spec. nov. (Fig. 189—194, 197—205)

Holotype, ♀, length of body 2.2, length of fore wing 2.0 mm.

Head. — Antennal segments 20 (one paratype: 21), length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments 3.3 and 2.7 times their width, respectively, penultimate segments a quarter longer than wide; area in front of occipital carina finely crenulate; eye with some setae; frontal suture shallow; frons and vertex smooth; POL : Ø ocellus : OOL = 8 : 3 : 11; dorsal length of eye 1.1. times temples (Fig. 201), face smooth (but in paratypes sometimes micro-striate); length of malar space ca. twice basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.2 times its height; side of pronotum rugoso-striate; precoxal suture with some rugae, with micro-striae between, as surroundings (Fig. 197); metapleural flange large and blunt; notauli with spaced crenulae, narrow; mesoscutal lobes slightly convex; scutellum almost smooth, its lateral carina medium-sized, not protruding apically (but slightly raised in some paratypes); propodeal tubercle absent; surface of propodeum reticulato-rugose, with undivided medial and both lateral carinae rather indistinctly developed (Fig. 205).

Wings. — First discoidal cell sharp, sub-petiolate (but in some paratypes narrowly truncate) anteriorly; d 1 : d 2 = 3 : 7; parastigma medium-sized.

Legs. — Length of femur, tibia and of basitarsus of hind leg 5.2, 9.0 and 7.5 times their width, respectively; fore and middle claws with long, blackish, tooth-shaped, bristles; hind claw simple.

Metasoma. — Length of 1st tergite 1.4 times its apical width, surface striato-rugose, dorsal carinae distinct in basal fifth (in one paratype basal two-thirds), spiracle flat (Fig. 205); length of ovipositor sheath 0.20 times fore wing.

Colour. — Blackish brown; basal half of antenna (in paratypes often more), labrum, mandible, clypeus apically, head and mesonotum partially, metasoma after 1st tergite, brownish or reddish yellow; palpi, tegulae and parastigma, yellowish; pterostigma, brown; legs, brownish yellow but base of hind coxa, hind femur (except base and apex) and telotarsus, brown.

Holotype ♀ in CNC, Ottawa: "Barwick, N.S., March 1952, P. Hutchinson", "ground under apple". Paratypes: topotypic, 4 ♀, three of which are micropterous, March 1952 (3 ♀) and April 10, 1952 (1 ♀) (CNC, AC); Alaska, Kotzebue, 420, 14.viii.1958, Lindroth, 5 ♀, one of which is micropterous (CNC, AC); Aklavik, Nortwest Territory, 12.vi.1956, R. E. Leech (AC); id., 4.vi.1956, E. F. Cashman (CNC); King Salmon, Naknek R., Alaska, 11.vii.1952, J. B. Hartley (CNC); Hudson Bay, Saskatoon, 15.ix. 1959, J. R. Vockeroth (AC); McMurray, Alberta, 4.viii.1953, G. E. Ball (CNC); Summit Lake, British Columbia, mi 392 Alaska Hwy, 16.vii.1959, 4600′, R. E. Leech (CNC, micropterous); Ontario, Chatterton, 13 mi N. Belville, meadow, C. D. Dondale, 6 ♀, three of which are micropterous, 14 and 17.vii.1967, 9.iv.1968 and 14.vii.1969 (CNC, AC, HC); Canada, Upper Liard R. (Hwy bridge), Yukon Territory 303, 21.vi. 1958, Lindroth (CNC); British Columbia, Liard R., Hot Springs, 1725 ft, 24.viii.1962, P. J. Skitsko (AC); Moosilauke, 4310 ft, New Hampshire 6190 (USNM); Swan River, Manitoba, July 9, 1974, H. G. Wylie (micropterous, CNC) (all ♀).

Male. From Catterton (Ont.) and Island Falls (Ont.); length of fore wing distinctly or somewhat shorter than body (Fig. 203); 21 antennal segments.

Notes. Data of capture indicate the hibernation of the adults.

Micropterous specimens occur frequently (Fig. 189—194) and have the length of the mesosoma 1.3 times its height; length of ovipositor sheath 0.4—0.5 times hind femur (as in macropterous form) and 0.31 times fore wing.

Close to *diversicornis* and *ruficornis,* but *striatus* usually has mesopleura striate to a larger extent, discoidal cell sharp and subpetiolate (difference especially clear in ♂ (Fig. 203 versus 170), mesoscutum more slender (Fig. 202, 160), malar space longer, metasoma usually yellowish, and hind tibia brown.

Blacus (Ganychorus) collaris (Ashmead) (Fig. 206—212)

Ashmead, 1894, J. Linn. Soc. 25: 131 (as *Ganychorus*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.

Holotype, ♀, length of body 1.8 mm (other specimens 1.9—2.6 mm), length of fore wing 1.7 mm (1.8—2.4 in other specimens).

Head. — Antennal segments 20, length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments (4.2—) 5.0 and (3.0—) 3.5 times their width, respectively, length of penultimate segments somewhat less than 1.5 times their width; area in front of occipital carina distinctly crenulate; eye bare; frontal suture shallow; frons smooth, but vertex somewhat superficially rugose near ocelli (Fig. 212); POL : Ø ocellus : OOL = 10 : 4 : 12; dorsal length of eye 1.1 times temple (Fig. 212); face superficially rugose (but in some specimens smooth); length of malar space ca. twice basal width of mandible; malar suture absent (but present in specimen from Mexico).

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulato-rugose, except for dorsal third; zone behind prepectal carina indistinctly crenulate (but distinct in other specimens); epicnemial suture rugoso-striate, rather smooth in holotype; precoxal suture striate (in figured specimen also surroundings, Fig. 206); metapleural flange blunt, distinct; notauli with spaced crenulae, medium-sized; mesoscutal lobes rather convex; scutellum smooth (but superficially rugose in some specimens), its lateral carina lamelliform, protruding apically; propodeal tubercle absent; surface of propodeum superficially rugose, undivided medial and both lateral carinae strongly developed (Fig. 211).

Wings. — First discoidal cell truncate anteriorly (in some specimens sharp or nearly so); d 1 : d 2 = 5 : 10; parastigma large.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.0 (—6.5), 10.8 (9.2) and (in figured specimen) 9.0 times their width, respectively (hind basitarsus lost in holotype); fore and middle claws of examined specimens (fore claw of holotype lost) with large blackish bristles; hind claw with shorter, brownish setae.

Metasoma. — Length of 1st tergite 1.9 times its apical width (other specimens 1.7—2.0 times), surface superficially striato-rugose, dorsal carinae rather weakly developed, but distinct in basal nine-tenths, spiracle slightly protruding; ovipositor sheath 0.18 times fore wing (0.19 times in other specimens).

Colour. — Brownish; palpi, tegulae, mandible, antenna largely, and base of metasoma, more or less yellowish; legs brownish yellow but especially in hind leg coxa and femur basally (but indistinct in holotype), femur and tibia apically and telotarsus, brown.

Holotype in BM, London: "Type, H.T.", "B.M., Type Hym. 3.c.664", "*Ganychorus* *collaris* Ashm., type, unique", "W. Indies 99-331", "March", "500 feet", "St. Vincent H. H. Smith".

Male. Parastigma as ♀, not enlarged as in *epitolus* and *ruficornis*, also head less transverse than *epitolus*, antennal segments 21.

Examined ♀ specimens: Parke Reserve, Kam. Co., Quebec, 950′ (ft), 18.viii.1957, W. R. M. Mason (specimen figured); Blacksburg, Virginia, 2100′, 27.v.(19)62, J. G. Chillcott; Hull, Quebec, 3 Aug. (19)65, Malaise trap; Mt. Mitchell, 6800′, North Carolina, 12.viii.1957, J. G. Chillcott; Mexico, Dgo., 9000′, El Salto, 10 m.W., 29 June 1964, W. R. M. Mason, robust and darker specimen with malar space somewhat shorter, malar suture distinct; 9 ♀ Brazil, Nova Teutonia, 7.v.1938, 1.xii.1938, 30.v.1938, 12.iii. 1936 and 19.v.1938; iii.1957; v. 1971, vii.1971 (2 ×); from the same locality 2 ♂, 4.xii. and 19.iv.1938; 1 ♀ from Colombia (Choco, 1000 m., 7—8.iv.1973, 5°45′N 16°30′W, J. Helava, CNC) and Argentina (Horco Molle, Tucuman, vi.1968, C. C. Porter, CNC). I was unable to separate the Neotropical specimens from the Nearctic material, although they are somewhat less sculptured.

Note. Related to *ambulans*, *armatulus* and *tripudians*, but *collaris* differs from *ambulans* by the protruding lateral carina of the scutellum apically and by the hind claw without blackish bristles (at most with shorter, brownish bristles). Differs from *armatulus* by shorter malar space (Fig. 164 versus Fig. 208) and apical two-fifths of hind femur, which is less darkened. Compared to *tripudians, collaris* has hind femur darkened and length of 1st tergite 1.7—2.0 (versus 2.4—2.5 in *tripudians*) times its apical width.

Blacus (Ganychorus) epitolus spec. nov. (Fig. 213—219)

Holotype, ♀, length of body 2.3, length of fore wing 2.1 mm.

Head. — Antennal segments 20, length of 3rd segment 1.3 times 4th segment; length of 3rd and 4th segments 4.7 and 3.7 times their width, respectively, length of penultimate segments ca. 1.5 times their width; area in front of occipital carina finely crenulate; eye almost bare, except for some setae, (eye distinctly more protruding than in *collaris* (Fig. 212, 214)); frontal suture absent; frons and vertex smooth; POL : Ø ocellus : OOL = 8 : 3 : 10; dorsal length of eye 1.6 times temple; face smooth; length of malar space twice basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulate except for medio-dorsal area (Fig. 213); zone behind prepectal carina relatively widely crenulate; epicnemial suture smooth; precoxal suture crenulate medially; metapleural flange distinct; notauli rather indistinctly crenulate, narrow; mesoscutal lobes moderately convex; scutellum smooth, except for some indistinct rugae, its lateral carina lamelliform, protruding apically; propodeal tubercle absent; surface of propodeum superficially rugose, its undivided medial carina and both lateral carinae strongly developed (Fig. 219).

Wings. — First discoidal cell truncate anteriorly; d 1 : d 2 = 9 : 18; parastigma large.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.6, 10.0 and 12.5 times their width, respectively; fore and middle claws with blackish bristles (length of largest bristle of fore claw somewhat longer than in *collaris*), subbasally with 2 ventral, blackish bristles; hind claw simple.

Metasoma. — Length of 1st tergite 2.1 times its apical width, surface reticulato-rugose, dorsal carinae distinct near dorsope only, not distinctly differing from medial rugae

(Fig. 219), spiracle distinctly protruding; length of ovipositor sheath 0.14 times fore wing.

Colour. — Reddish brown; mandible, palpi, antennal sockets anteriorly, tegulae, 2nd tergite and base of 3rd metasomal tergite and antenna, yellowish (but apical segment of antenna somewhat darkened); legs, yellowish, but telotarsi and subapical ring of hind femur, brown; pterostigma, light brown.

Holotype ♀ in BM, London: "Brazil, Nova Teutonia, 27°B, 52-53°L, 24.v.1938, Fritz Plaumann, B.M. 1938-458". Paratypes: 5 ♀, topotypic, 3.vi., 8.vi., 17 and 20.iv. 1938, and .v.1971 (BM, AC, CNC; antennal segments 20); 2 ♀, Surinam, Djoemoe (= near begin of Surinam-river), at light, 24.ii-4.iii.1963, P. H. v. Doesburg jr. (AC); 12 ♂, topotypic, 25.iii., 23.iv., 7.v., 11.v., 12.v. (7 ♂) and 7.vi.1938; by strongly transverse head in dorsal view and enlarged parastigma (like ♂ of *ruficornis* (Fig. 170)) easily discernable from *collaris*; number of antennal segments in 12 ♂: 20 (83.4%), 21 (8.3%) and 22 (8.3%).

Note. Closely related to *collaris*; the large, protruding eye is the best character for separation; the occurrence of both species together at Nova Teutonia makes it most likely that we have two good species. All Brazilean specimens of *collaris* have the discoidal cell sharp anteriorly, which in *epitolus* is always truncate, and have the first metasomal tergite relatively short as compared to *epitolus*.

Blacus (Ganychorus) dracomontanus Haeselbarth

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 67—68.

Only four specimens are known of this species, all from S. Africa: Natal and Transvaal. According to Haeselbarth closely related to *ruficornis*.

Blacus (Ganychorus) genalis Haeselbarth (Fig. 10, 11, 175)

Haeselbarth, 1974, Mitt. Münch. ent. Ges. 64: 68—70.

Throug the kindness of Dr. Haeselbarth I could examine the holotype from S. Africa: length of 3rd antennal segment 1.4 times 4th segment, length of 3rd and 4th segments 6.3 and 4.5 times their width, respectively; length of basalis 2.1 times n. rec. and 1.4 times cu 1; 1st discoidal cell narrowly truncate; length of 1st metasomal tergite 2.2 times its apical width; length of malar space 1.8 times basal width of mandible; subdiscoideus almost straight in left wing, somewhat bent basally in right wing; length of ovipositor sheath ca. 0.16 times fore wing (0.15 times in specimens from Zaïre); length of femur, tibia and basitarsus of hind leg 6.4, 10.2 and 9.0 times their width, respectively; legs completely yellowish brown.

Additionally examined are 2 ♀ from Zaïre: Lubumbashi, 18-19.iii.1971 and 10-11.ii. 1972, collected at light. This species has the subdiscoideus almost straight (Fig. 175) and shape of 1st discoidal cell rather variable (Fig. 10, 11); the first mentioned ♀ has the hind femur dark brown, relatively stout, and the shape of the 1st metasomal tergite less slender than the latter ♀.

Blacus (Ganychorus) haeselbarthi spec. nov. (Fig. 220—226)

Holotype, ♀, length of body 2.0, length of fore wing 2.2 mm.

Head. — Antennal segments 20, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 4.0 and 3.0 times their width, respectively, penultimate segments slightly longer than wide (Fig. 220); dorsal length of eye equal to length of temple; frontal suture short, shallow; POL : Ø ocellus : OOL = 5 : 2 : 5; area in front of occipital carina nearly smooth; face superficially rugulose, medially smooth; length of malar space about twice basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum finely reticulato-rugose; zone behind prepectal carina slightly crenulate; epicnemial suture almost smooth, finely rugose; precoxal suture with fine, sloping micro-striae (Fig. 220); metapleural flange distinct; notauli deep, crenulate basally only; mesoscutal lobes rather convex; scutellum smooth, its lateral carina distinctly developed, not protruding apically, along inner side crenulate; propodeal tubercle absent; surface of propodeum superficially reticulato-rugose, its medial carina undivided.

Wings. — First discoidal cell distinctly truncate anteriorly; d 1 : d 2 = 9 : 16; parastigma medium-sized.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.8, 11.0 and 10.0 times their width, respectively; fore and middle claws with blackish teeth and bristles; hind claw simple.

Metasoma. — Length of 1st tergite 1.3 times its apical width, surface longitudinally rugulose, dorsal carinae distinct in basal half, spiracle protruding (Fig. 225); length of ovipositor sheath 0.21 times fore wing.

Colour. — Dark brown; base of antenna, tegulae, legs, palpi, mandible, labrum and legs, reddish; hind femur and telotarsi darkened; pterostigma, brown.

Holotype in MAC, Tervuren: "Tanganyika Terr., Mt. Meru, Olkokola, versant N.O., 2500-2600 m, 3-8.vii.1957", "Mission zoolog. I.R.S.A.C. en Afrique orientale P. Basilewsky et N. Leleup".

Note. Closely related to *diversicornis,* but it differs from this species by the stout scutellum, almost completely brown hind femur, and truncate first discoidal cell.

It is a great pleasure to name this species after Dr. E. Haeselbarth, the excellent reviser of the Palaearctic species of *Blacus* and *Coeloides.* Without his invaluable help this revision would have been far less complete.

Blacus (Ganychorus) strictus Stelfox

Stelfox, 1941, Proc. R. Ir. Acad. 46 B: 121, Fig.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 25.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 119—120, Fig. 21, 38, 98.

Not known from the Netherlands, scarcely collected.

Blacus (Ganychorus) varius Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 114—115, Fig. 25, 28, 92, 110.

Species known from the S.E. Alps, in deciduous forests, according to Haeselbarth.

Blacus (Ganychorus) nixoni Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 115—116, Fig. 16, 27, 37.

Only known from Cyprus.

Blacus (Ganychorus) tripudians Haliday

Haliday, 1835, Ent. Mag. 3: 41.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 25.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch., 16: 94—95, Fig. 1, 31, 93, 103, 107.

Widely distributed species; specimens examined from the Netherlands: from Putten and Ede (both Gelderland); Waarder (Zuid-Holland); Wijster (Drente) and Thorn (Limburg).

Blacus (Ganychorus) maculipes Wesmael

Wesmael, 1835, Nouv. Mém. Acad. Brux. 9: 94.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 22.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 104—106, Fig. 10, 18, 36, 94, 114.

According to Haeselbarth, this species is not expected to be common in the Netherlands. I have examined specimens from Switzerland (Aeschi), Austria (Ebriach and Afritzer See) and Hungary (Debreczen). I have seen a ♂ from the north of the Netherlands (Westernieland (Groningen), 13.viii.1929), which may belong to this species. The record of Snellen van Vollenhoven (1876: 240) could not be confirmed and may apply to *diversicornis*.

Blacus (Ganychorus) ambulans Haliday

Haliday, 1835, Ent. Mag. 3: 43.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 16.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 100—103, figs. 4, 5, 6, 11, 17, 97.

Not yet found in the Netherlands, but the ssp. *macropterus* Haeselbarth, 1973, might be expected.

Blacus (Ganychorus) koenigsmanni Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 103—104, Fig. 19.

Species seldom collected, not found in the Netherlands.

Blacus (Ganychorus) diversicornis (Nees) (Fig. 195, 196)

Nees von Esenbeck, 1834, Hym. Ichn. affin. Mon. 1: 49 (as *Bracon*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 19.
Haeselbarth, 1973a, Veröff. Zool. St.-Samml., Münch. 16: 107—109, Fig. 12, 24, 29, 100, 109.
Ruth, 1861, Berl. Ent. Z. 5: 136 (*Blacus compar*).

Differs from *striatus* by shorter malar space (Fig. 195), less striate mesopleura and somewhat more slender antenna (Fig. 196).

Examined specimens from the Netherlands: Waarder and Oegstgeest (both Zuid-Holland) and Putten (Gelderland).

Blacus (Ganychorus) kaszabi Haeselbarth

Haeselbarth, 1973b, Folia ent. hung. (N.S.) 26 (Suppl.): 75—78, Fig. 1.

E. Palaearctic species, described from Mongolia.

Blacus (Ganychorus) pallipes Haliday (Fig. 1—8)

Haliday, 1835, Ent. Mag. 3: 41.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 17.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 92—93, Fig. 33.
Wesmael, 1835, Nouv. Mém. Acad. Brux. 9: 98 (*Blacus tuberculatus*).

Largest species of the genus; specimens examined from: England: Winpith (Dorset); Netherlands: Ulvenhout (Noord-Brabant), Wijster (Drente) and Waarder (Zuid-Holland). Snellen van Vollenhoven (1876: 240) also mentioned Heemstede (Noord-Holland).

Blacus (Ganychorus) nitidus Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 112—114, Fig. 20, 32.

One ♂ from Norway (Selva, 63°36′N/9°43′E), new to the Norwegian fauna, which confirms Haeselbarth's assumption that this species has a boreo-montane distribution.

Blacus (Ganychorus) apaches spec. nov. (Fig. 227—234)

Holotype, ♀, length of body 1.8, length of fore wing 2.0 mm.

Head. — Antennal segments 20 (also in ♀ paratype), length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 4.0 and 3.3 times their width, respectively, length of penultimate segments 1.7—1.8 times their width; eye bare; dorsal length of eye 1.2 times temple; POL : Ø ocellus : OOL = 7 : 4 : 8; frontal suture shallow; frons and vertex smooth; area in front of occipital carina narrowly crenulate; face smooth; length of malar space ca. 1.5 times basal width of mandible; malar suture present.

Mesosoma. — Length of mesosoma 1.2 times height; side of pronotum reticulate except for dorsal third; zone behind prepectal carina crenulate; epicnemial suture smooth; precoxal suture striato-rugose; metapleural flange distinct; notauli narrow, smooth, basally crenulate only; mesoscutal lobes moderately convex; scutellum smooth, except for some sublateral short carinae, its lateral carina lamelliform, somewhat (but distinctly in paratype) protruding apically; propodeal tubercle absent; surface of propodeum almost smooth, superficially rugose, its medial carina lamelliform, undivided (Fig. 232).

Wings. — First discoidal cell narrowly truncate anteriorly; d 1 : d 2 = 3 : 7; parastigma medium-sized.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.6, 10.0 and 9.0 times their width, respectively; fore and middle claws with large blackish bristles (Fig. 229); hind claw simple (except for some yellowish setae).

Metasoma. — Length of 1st tergite 2.1 times its apical width, surface longitudinally rugoso-striate (Fig. 232), dorsal carinae distinct in basal three-fifths, spiracle flat; length of ovipositor sheath 0.19 times fore wing.

Colour. — Reddish brown; metasoma apically and telotarsi darkened; pronotum, orange; pedicellus and clypeus partly, mandible, labrum, palpi, tegulae and legs, yellowish; pterostigma, light brown.

Holotype ♀ in BM, London: "Evergreen shrubs on sandy shore, 9-17.xii.1961", "Arum Valley below Tumlingtar, River Sabhaya west shore, c. 1800′", "Brit. Mus. East Nepal Exp. 1961-62, R. L. Coe Coll. B.M. 1962-177". Paratype: 1 ♀, topotypic (AC).

Blacus (Ganychorus) pectinatus Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 99—100, Fig. 9, 15, 101, 106, 111.

Not known from the Netherlands.

Blacus (Ganychorus) conformis Wesmael

Wesmael, 1835, Nouv. Mém. Acad. Brux. 9: 96.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 109—111, Fig. 30, 102, 108.

Not yet found in the Netherlands, but it may be expected in the eastern part of the country.

Blacus (Ganychorus) capeki Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 95—96, Fig. 13, 34, 95, 104, 112.

Species recorded from Central Europe.

Blacus (Ganychorus) mischocytus spec. nov. (Fig. 235—241)

Holotype, ♀, length of body 2.3, length of fore wing 2.5 mm.

Head. — Antennal segments 20 (in paratype also 20, in allotype 21), length of 3rd segment 1.8 times 4th segment; length of 3rd and 4th segments 4.5 and 2.8 times their width, respectively; length of penultimate segments ca. 1.5 times their width; eye bare; dorsal length of eye equal to length of temple (Fig. 240); POL : Ø ocellus : OOL = 3 : 2 : 5; frontal suture distinct; frons and vertex smooth; area in front of occipital carina narrowly crenulate; face smooth; length of malar space slightly less than twice basal width of mandible; malar suture wanting.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum rugoso-reticulate, except for dorsal half (Fig. 235); zone behind prepectal carina crenulate; epicnemial suture smooth; precoxal suture smooth except for two medial rugae (Fig. 235); notauli distinctly crenulate, narrow; mesoscutal lobes moderately convex; scutellum smooth but superficially rugose and with short sublateral carinae, its lateral carina lamelliform, protruding apically; propodeal tubercle small, sharp; dorsal surface of propodeum smooth (in paratype superficially rugose), its undivided medial carina and both lateral carinae strongly developed, posterior surface reticulate.

Wings. — First discoidal cell distinctly petiolate anteriorly; d 1 : d 2 = 9 : 19; parastigma rather small.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.8, 10.0 and 7.0 times their width, respectively; fore and middle claws with bristles (of middle claw rather indistinct, but distinctly developed in paratypes); hind claw simple.

Metasoma. — Length of 1st tergite 1.9 times (1.9—2.2 in paratypes) its apical width, surface reticulato-rugose, smooth in apical fifth, dorsal carinae distinct in basal fifth, spiracle flat (Fig. 238); length of ovipositor sheath 0.20 times fore wing.

Colour. — Reddish brown; pedicellus, annellus, palpi, mandible, tegulae and metasoma except for 1st tergite, yellowish; legs yellowish but telotarsi, hind femur subapically and hind tibia largely, brownish.

Holotype ♀ in BM, London: "Tjibodas, Java, 5.000-7.000 ft, Aug. 1913, Dr.

Koningsberger, 1913-523". Paratypes: 2 ♀, topotypic (AC, BM); 1 ♂ allotype, topotypic, parastigma enlarged and 1st discoidal cell widely truncate, propodeal tubercle absent, medial carina double posteriorly (BM).

Note. Near *nixoni*, but *mischocytus* has more antennal segments, face smooth, face more narrowed ventrad (cf. Fig. 27 in Haeselbarth, 1973a), propodeal tubercle sharp, malar space longer, 1st metasomal tergite much more slender, hind femur darkened subapically and 1st discoidal cell of ♀ distinctly petiolate (cf. Fig. 37 in Haeselbarth, 1973a).

Blacus (Ganychorus) stami spec. nov. (Fig. 242—248)

Holotype, ♀, length of body and of fore wing 2.3 mm.

Head. — Apical segments of antenna broken off (antennal segments of paratype 20), length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments 5.2 and 3.7 times their width, respectively; eye bare; dorsal length of eye 1.1 times temple; POL : Ø ocellus : OOL = 9 : 4 : 9; frontal suture shallow; frons, vertex, face and clypeus smooth; area in front of occipital carina finely crenulate; length of malar space ca. 1.7 times basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum largely reticulato-rugose; zone behind prepectal carina with some widely spaced short crenulae; epicnemial suture almost smooth, with superficial rugae; precoxal suture complete, finely striate; notauli deep, only crenulate anteriorly, moderately narrow; mesoscutal lobes moderately convex; scutellum smooth, its lateral carina complete, lamelliform apically, protruding (Fig. 242); propodeal tubercle absent; dorsal surface of propodeum superficially rugose, its posterior surface reticulate and its medial carina undivided posterodorsally (Fig. 248).

Wings. — First discoidal cell truncate anteriorly; d 1 : d 2 = 7 : 23; parastigma rather large.

Legs. — Length of femur and tibia of hind leg 7.0 and 9.6 times their width, respectively; fore and middle claws with large blackish bristles; hind tarsi broken off.

Metasoma. — Length of 1st tergite 1.9 times its apical width, its surface superficially reticulato-rugose medially and with some carinae laterally (Fig. 248), spiracle distinctly protruding, dorsal carina distinct in basal fifth; length of ovipositor sheath 0.15 times fore wing.

Colour. — Reddish brown; antenna, palpi, mandible, tegulae, pterostigma, veins, 1st and 2nd metasomal segments, and pronotum, more or less yellowish; legs yellowish but hind femur brown except its base.

Holotype ♀ in Collection Stam, Den Haag: "No. v. 8280, Stam Coll.", "Zaïre, Lubumbashi, 5-6.xi.1971, A. B. Stam, at light". Paratype: 1 ♀, topotypic, no. v. 7401 (AC).

Notes. Species characterized by relatively short basal vein, yellowish pterostigma, deep notauli, basally bent subdiscoideus, shape of 1st metasomal tergite, and apically protruding lateral carina of scutellum. It is a pleasure to dedicate this species to Dr. A. B. Stam, who collected many interesting small Hymenoptera in Central Africa.

Hysterobolus Viereck, 1913, subgenus, stat. nov.

Type-species: *Hysterobolus mallochi* Viereck, 1913.

Diagnosis. — Length of body 2.0—2.6, length of fore wing 2.1—2.6 mm. Antennal segments of ♀ 18—19; eye with some short setae; occipital carina strongly developed; frons and vertex smooth; at least upper part of face transversely rugose; length of malar space 1.5—2.0 times basal width of mandible, without malar suture; metapleural flange rather large, blunt; notauli complete, more or less deep; scutellar suture wide and deep; scutellum reticulate (in ♂ usually weaker developed), lateral carina well developed, complete; side of scutellum reticulato-rugose; parastigma small or slightly enlarged; 1st discoidal cell sharp anteriorly, sometimes subpetiolate; d 1 : d 2 = 1 : 1.3—1.9; metacarp not distinctly surpassing radial cell; length of hind femur 4.3—5.6 times its width; hind coxa reticulato-rugose dorsally; fore claw of ♀ usually with long, rather stout and dark bristles, seldom indistinct; middle and hind claws simple; propodeal tubercle large or medium-sized (usually weaker developed in ♂; medial carina of propodeum undivided; length of ovipositor sheath 0.15—0.22 times fore wing; metasoma smooth after 1st tergite; hypopygium small; ovipositor straight.

Distribution. — Holarctic: one species; Nearctic: four species; Palaearctic: one species. All species are rarely collected, except *robustus.*

Note. Important apomorphous characters are: 1 — scutellum reticulate; 2 — lateral carina of scutellum complete; 3 — fore claw of ♀ with blackish bristles, seldom indistinctly developed; 4 — propodeal tubercles large to medium-sized; 5 — medial carina of propodeum undivided or indistinct; 6 — 2nd tergite of metasoma smooth; 7 — ovipositor short.

Key to Nearctic species of the subgenus *Hysterobolus*

1. Length of 1st metasomal tergite 2.0—2.3 times its apical width, its dorsal carinae usually confluent (Fig. 260, 267); mesoscutal lobes slightly convex 2
— Length of 1st tergite 1.3—1.9 times its apical width, its dorsal carinae remote from each other (Fig. 253, 272); if intermediate then mesoscutal lobes distinctly convex 3
2. Temples sub-parallel, maximum width of head 1.5 times its minimum width in dorsal aspect (Fig. 258); propodeal tubercle sub-truncate (Fig. 255); face relatively long (Fig. 256) . . . . *mallochi* (Viereck) (p. 217)
— Temples narrowed behind, its maximum width 1.7 times its minimum width (Fig. 264); propodeal tubercle sharp (Fig. 262); face relatively short (Fig. 266) . . . . *trapezoides* spec. nov. (p. 218)
3. Precoxal suture with some widely spaced rugae (Fig. 268); length of ovipositor sheath 0.22 times fore wing; face with distinctly defined, smooth triangle (Fig. 273); notauli rather wide . . . . *redactus* spec. nov.[1]) (p. 218)
— Precoxal suture with longer, closely spaced rugae (Fig. 275); length of ovipositor sheath 0.15—0.19 times fore wing; face completely rugose or smooth area indistinctly defined (Figs. 276, 285); notauli variable (Fig. 254, 277) 4
4. Mesoscutal lobes flattened posteriorly; head elongate in frontal aspect (Fig. 276); notauli rather wide (Fig. 277); antennal segments of ♀ 17 . . . . *patulus* spec. nov. (p. 219)
— Mesoscutal lobes convex (Fig. 286); head shorter in frontal aspect (Fig. 251, 285); notauli rather narrow (Fig. 254); antennal segments of ♀ 18 . . . . *robustus* Haeselbarth (p. 220)

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[1]) If hind femur is largely infuscated, cf. *trapezoides*.

Key to Palaearctic species of the subgenus *Hysterobolus*

1. Eye comparatively long in dorsal aspect, 0.9 times temple (Fig. 283); malar space sub-equal to ITL (Fig. 285); both sexes known; macropterous form only . . . . *robustus* Haeselbarth (p. 220)
— Eye comparatively short in dorsal aspect, 0.7 times temple (Fig. 39 in Haeselbarth, 1973a); only ♀ known; usually micropterous; malar space longer than ITL (cf. Fig. 276) . . . . *mamillanus* Ruthe (p. 220)

Blacus (Hysterobolus) mallochi (Viereck) comb. nov. (Fig. 255—261)

Viereck, 1913, Proc. U. S. natn. Mus. 44: 559.
Shenefelt, 1970, Hym. Cat. (nov. ed.) 5 (2): 251.

Holotype, ♀, length of body 2.6, length of fore wing 2.4 mm.

Head. — Antennal segments 18, 3rd segment 1.4 times as long as 4th segment, length of 3rd and 4th segments 3.8 and 2,0 times their maximum width, respectively, penultimate segments slightly longer than wide (Fig. 255); frontal suture weakly developed (Fig. 258); area in front of occipital carina distinctly crenulate; POL : Ø ocellus : OOL = 6 : 3 : 7; dorsal length of eye 0.8 times length of temple, temples narrowed behind; maximum width of head 1.5 times its minimum width (Fig. 258); face distinctly transversely rugose.

Mesosoma. — Length of mesosoma 1.5 times its height; side of pronotum reticulate except dorso-posteriorly (Fig. 255); zone behind prepectal carina crenulate; epicnemial suture narrowly crenulate; precoxal suture sparsely reticulate, widened anteriorly (Fig. 255); mesoscutal lobes scarcely convex; notauli wide, distinctly crenulate, widened apicad (Fig. 261); scutellar suture with four longitudinal carinae; lateral carina of scutellum protruding apically (Fig. 255). Propodeal tubercle large (Fig. 255); propodeum reticulate, sculpture indistinct anteriorly.

Wings. — R 2 straight; d 1 : d 2 = 6 : 8.

Legs. — Length of femur, tibia and basitarsus 4.3, 9.7 and 7.7 times their width, respectively; fore claw with long, dark brownish bristles; middle and hind claws simple, medium-sized.

Metasoma. — Length of 1st tergite 2.2 times its apical width, superficially striato-rugose, dorsal carinae distinct in basal half, confluent in front of spiracles (Fig. 260), spiracle slightly protruding; length of ovipositor sheath 0.22 times fore wing.

Colour. — Dark fulvous; basal antennal segments (but distal margins dark), mandible, labrum, 1st and 2nd metasomal segments and legs, yellow; distal antennal segments, brown; clypeus (partly), mesoscutum and scutellum, yellowish red; wing veins, brown; pterostigma basally and parastigma, yellowish.

Holotype in USNM, Washington: "Rosslyn, Va.", "22.ix.1912", "Mallogh Coll", "type no. 15285 USNM", "*Histerobolus* (sic!) *mallochi* Vier, Type ♀".

In the USNM collection there is a second ♀ of this species from Vienna, Virginia (21.viii.1932, J. C. Bridwell) with antennal segments 19, metasomal segments with membranous margins and 1st tergite more sculptured; further examined: 3 ♀ from Hull, Quebec and Laurel, Maryland.

Blacus (Hysterobolus) trapezoides spec. nov. (Fig. 262—267)

Holotype, ♀, length of body 2.4, length of fore wing 2.5 mm.

Head. — Antennal segments 19, 3rd segment 1.5 times long as 4th segment, length of 3rd and 4th antennal segments 4.8 and 3.3 times their width, respectively, penultimate segments distinctly longer than wide (Fig. 262); area in front of occipital carina distinctly crenulate; frontal suture present as a short depression (Fig. 264); POL : Ø ocellus : OOL = 4 : 3 : 6; dorsal length of eye equal to temple; temple distinctly narrowed behind eye; maximum width of head 1.7 times its minimum width (Fig. 264); face rather superficially rugose medially.

Mesosoma. — Length of mesosoma 1.4 times its maximum height; side of pronotum reticulate, except dorsal third (Fig. 262); zone behind prepectal carina crenulate; epicnemial suture superficially rugose; precoxal suture wide with distinct, nearly longitudinal rugae (Fig. 262); mesoscutal lobes slightly convex; notauli wide, remotely crenulate, slightly widened apicad, with medial carina apically (Fig. 265); scutellar suture with three longitudinal carinae. Propodeal tubercle rather large, sharp apically (Fig. 262); propodeum sparsely reticulate, almost smooth anteriorly.

Wings. — R 2 straight, d 1 : d 2 = 11 : 17.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.6, 13.0 and 9.3 times their width, respectively; fore claw with some scarcely visible darker bristles; middle and hind claws simple, medium-sized.

Metasoma. — Length of 1st tergite 2.1 times its width, reticulato-rugose, dorsal carinae distinct in basal third, confluent (Fig. 267); length of ovipositor sheath 0.16 times fore wing.

Colour. — Dark brown; antenna (except for scapus and terminal segments), palpi, tegulae, pterostigma, wing veins, legs (except for darkened apices of tibia and tarsus and base of tibia) and metasoma behind 1st tergite, yellowish brown; base of pterostigma, yellowish.

Holotype ♀ in CNC, Ottawa: "Mex. Dgo., 8000′ (ft), El Salto, 14 mi SW, 26.vi. 1964, W. R. M. Mason".

I have seen two aberrant ♀ from Mexico (Chis., 7 mi. SE. San Cristobal, 26.v.69, 7000′, H. J. Teskey) and Colombia (Quindo 11 km E. Calarca, 9.iii.1974, 7000′, S. & J. Peck) with dark hind legs and 1st tergite 1.7 times its apical width. Probably they belong to *trapezoides*.

Blacus (Hysterobolus) redactus spec. nov. (Fig. 268—274)

Holotype, ♀, length of body 2.6, length of fore wing 2.4 mm.

Head. — Antennal segments 19, 3rd segment 1.5 times as long as 4th segment, length of 3rd and 4th segments 4.0 and 2.8 times their width, respectively, penultimate segments slightly longer than wide (Fig. 268); area in front of occipital carina distinctly crenulate; frontal suture short (Fig. 269); POL : Ø ocellus : OOL = 4 : 2 : 5; dorsal length of eye 0.9 times length of temple, temple narrowed behind (Fig. 269); face weakly transversely rugose, except for a smooth, median triangle.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum crenulate, except for smooth distal two-fifths; zone behind prepectal carina almost smooth; epicnemial suture superficially sculptured; precoxal suture reduced with some widely spaced, inclivous rugae (Fig. 268); mesoscutal lobes distinctly convex; notauli rather wide, superficially crenulate, slightly widened apicad (Fig. 271); scutellar suture with four weakly developed longitudinal carinae; lateral carina of scutellum protruding apically (Fig. 268). Propodeal tubercle large, sharp apically (Fig. 268); propodeum almost smooth dorsally, except for medial carina.

Wings. — R 2 and cu 1 weakly sinuate (Fig. 268); d 1 : d 2 = 9 : 17.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.3, 10.8 and 7.0 times their width, respectively; fore claw apparently simple, bristles indistinct; middle and hind claws simple, medium-sized.

Metasoma. — Length of 1st tergite 1.6 times its apical width, medio-dorsally superficially reticulato-rugose, laterally rugoso-striate, dorsal carinae distinct in basal two-thirds, spiracle flat; length of ovipositor sheath 0.22 times fore wing.

Colour. — Chestnut-brown; antenna (darkened apically), palpi, legs (5th tarsal segment darkened) and tegulae, brownish yellow; mesoscutum, face, clypeus and mandible, reddish brown; pterostigma, brown (but small basal part yellowish).

Holotype ♀ in SC, Madison: "Wexford Co., Mich., 3.ix.1944, R. R. Dreisbach".

Blacus (Hysterobolus) patulus spec. nov. (Fig. 275—280)

Holotype, ♀, length of body 2.6, length of fore wing 2.4 mm.

Head. — Apical segments of antenna missing (in paratype 17), 3rd segment 1.6 times as long as 4th segment, length of 3rd and 4th segments 3.6 and 2.3 times their width, respectively; area in front of occipital carina slightly crenulate; frontal suture short; POL : Ø ocellus : OOL = 5 : 2 : 5; dorsal length of eye 0.7 times length of temple temple narrowed behind (Fig. 279); face transversely rugose.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulate, except smooth dorsal two-fifths; zone behind prepectal carina sparsely crenulate; epicnemial suture almost smooth; precoxal suture reticulato-rugose, wide (Fig. 275); mesoscutal lobes flattened posteriorly; notauli rather wide, superficially and sparsely crenulate, carinate laterally, not widened apicad (Fig. 277); scutellar suture with one longitudinal carina. Propodeal tubercle large, rather obtuse (Fig. 275); propodeum densely reticulate, anteriorly a narrow smooth area.

Wings. — R 2 straight; d 1 : d 2 = 11 : 17.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.2, 8.7 and 6.8 times their width, respectively; fore claw with long, rather stout bristles; middle and hind claws simple, rather small.

Metasoma. — Length of 1st tergite 1.7 times its apical width, medio-dorsally reticulate, superficially striate laterally, dorsal carinae distinct in basal 0.7 (Fig. 280), spiracle slightly protruding; length of ovipositor sheath 0.15 times fore wing.

Colour. — Dark chestnut-brown; antenna, legs, palpi, mandible, tegulae, 2nd and 3rd metasomal tergites, brown; pterostigma, brown (except for small basal part, yellowish).

Holotype ♀ in CNC, Ottawa: "Cultus Lake, B.C., 1.vii.1948, H. R. Foxlee". Paratype: "Robson, B.C., 4-7.vii.1947, H. R. Foxlee" (AC).

Closely related to the Palaearctic *mamillanus*, except for minor differences; differs mainly by the laterally carinate notauli, number of antennal segments (18—19 in *mamillanus*) and the wider, more flattened mesoscutum.

Blacus (Hysterobolus) robustus Haeselbarth (Fig. 249—254, 281—287)

Haeselbarth, 1973, Veröff. zool. St.-Samml., Münch. 16: 116—117, Fig. 23, 40, 99.

Described after 2 ♀ from Arizona and Michigan; length of body 2.6—2.8, length of fore wing 2.6 mm; small specimens examined from North Carolina and Quebec, measuring ca. 2.0 mm.

Head. — Antennal segments 18, 3rd segment 1.6 times as long as 4th segment, length of 3rd and 4th segments 4.1 and 2.6 times their width, respectively, penultimate segments slightly longer than wide; area in front of occipital carina distinctly crenulate; frontal suture short; POL : Ø ocellus : OOL = 4 : 2 : 5; dorsal length of eye 0.9 times temple, temple sub-parallel (Figs. 252, 283); face transversely rugose.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum puncto-reticulate, except for dorsal smooth area (Fig. 281); narrow zone behind prepectal carina crenulate; epicnemial suture rugose; precoxal suture wide, with sloping distinct rugae (Fig. 281); mesoscutal lobes distinctly convex (especially in lateral aspect); posterior half of notauli crenulate, slightly widened posteriorly (Fig. 286); scutellar suture with one distinct and two weakly developed carinae (Fig. 286). Propodeal tubercle large, more or less sharp apically (Fig. 281); propodeum densely reticulate, smooth anteriorly, except for medial carina.

Wings. — R 2 straight; d 1 : d 2 = 9 : 12—15.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.0—5.5, 10.5—11.9 and 8.6 times their width, respectively; fore claw with long, black bristles; middle and hind claws simple, medium-sized.

Metasoma. — Length of 1st tergite 1.4—1.5 times its apical width, reticulato-striate, dorsal carinae distinct in basal third; spiracle flat; length of ovipositor sheath 0.18 times fore wing (0.15 times in small form, Fig. 249—254).

Colour. — Blackish brown; metasoma, except for 1st tergite, and antenna largely, brown; legs, base of antenna, palpi, mandible, tegulae, pterostigma and wing veins, brownish yellow; femur, tibia and tarsus of hind leg darkened apically; base of hind tibia, yellowish; sometimes mesoscutum reddish.

Examined 17 ♀ from: Arizona (Rustlers Park), North Carolina (Great Smoky Mountains Nat. Park, Fig. 249—254), Georgia (Rabun Co.), Michigan (Midland Co.), New York (Lake Placid), Quebec (Old Chelsea, Lac Phillips, Norway Bay), Ontario (Marmora area (from moist fungus-rich wooded creed bed), Rondeau Prov. Pk., Innisville) (USNM, CNC, AC): paratype from König Coll. "B 385" (from Dagebüll, BRD). The latter has mesoscutal lobes less convex and length of 1st tergite 1.3 times its apical width (Fig. 287). I have seen males with 23—24 antennal segments which may be conspecific with *robustus*, from Ontario, Quebec and Virginia.

Blacus (Hysterobolus) mamillanus Ruthe (Fig. 288)

Ruthe, 1861, Berl. ent. Z. 5: 144.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 22.
Haeselbarth, 1973, Veröff. zool. St.-Samml., Münch. 16: 118—119, fig. 39.
Marshall, 1889, Trans. R. ent. Soc. London: 174 (*Blacus aptenodytes*).

This is the only species not yet found in the Nearctic region; it may be confused with *patulus, adinus* and *robustus*. Through the kindness of Dr. Haeselbarth I could examine a ♀ from the former Konow-collection: Fürstenberg i.M., 20.4.(18)91, det. Haeselbarth

1970. This specimen is rather small (2.1 mm), but according to Haeselbarth the size of specimens varies from 2.0 to 2.5 mm; antenna reddish, 3rd segment 1.5 times as long as 4th segment, 3rd and 4th segment 3.0 and 2.0 times their width, respectively, penultimate segments square; length of eye 0.7 times temple; length of mesosoma 1.5 times its height; mesoscutal lobes slightly convex, notauli shallow, not or slightly carinated; scutellar suture rather shallow; precoxal suture wide, complete, with distinct carina apico-dorsally; propodeal tubercle medium-sized, rather blunt; propodeum smooth anteriorly; 1st metasomal tergite 1.4 times its apical width (Fig. 288); length of ovipositor sheath 0.18 times fore wing.

Blacus Nees, subgenus
(Fig. 300—446)

Nees von Esenbeck, 1818, Nova Acta Acad. Caesar. Leop. Carol. 9: 306.

Type-species: *Bracon humilis* Nees.

Diagnosis. — Length of body 1.5—3.7, length of fore wing 1.6—3.3 mm; antennal segments of ♀ 17, of ♂ 19—21; eye bare, small to medium-sized; occipital carina complete; usually frontal suture absent; length of maxillary palpus about equal to height of head or slightly shorter; face often rugose; clypeus smooth (except in *masoni*), wide and rather convex, its margin straight medially, thin; vertex and frons smooth (except in *masoni*); length of malar space about equal to or ca. twice basal width of mandible; side of pronotum reticulate except for dorsal second fifth portion; malar suture variable; metapleural flange usually distinct, blunt; notauli more or less complete; mesoscutal lobes and scutellum smooth (except in *masoni* and *paganus*); lateral carina of scutellum absent or weakly developed; side of scutellum reticulato-rugose; d 1 : d 2 = 1 : 0.7—3.8; metacarp surpassing radial cell in some Palaearctic species only; length of hind femur 3.7—6.9 times its width; all tarsal claws simple, medium-sized; hind coxa reticulato-rugose dorsally; propodeal tubercle present (but sometimes indistinctly developed); propodeal carinae less developed, medial carina indistinctly divided or undivided, or indistinctly developed on posterior surface of propodeum; length of 1st tergite of metasoma 1.4—2.2 times its apical width, its spiracle scarcely or not protruding; 2nd tergite smooth or with superficial, irregular depressions apically; ovipositor slightly bent ventrad (except in *masoni* and *cohibilis*); length of ovipositor sheath 0.18—0.46 times length of fore wing, but 0.88 times fore wing in *hastatus*.

This subgenus may be divided in two sections:

Section A: Parastigma relatively small (Fig. 300, 327, 339); 1st discoidal cell sharp anteriorly, sometimes subpetiolate (and in some aberrant specimens narrowly truncate); cu 3 usually absent or nearly so; propodeal tubercle small or indistinctly developed, often sharp apically; precoxal suture narrow, sometimes absent anteriorly; notauli rather weakly impressed, sometimes reduced posteriorly; length of ovipositor sheath usually 0.18—0.29 times fore wing, only in *cohibilis* 0.40 and in *hastatus* 0.88 times fore wing.

Syn.: *Miocolus* Foerster, 1862; *interstitialis*-, *hastatus*-, *exilis*- and *errans*-groups of Haeselbarth, 1973a.

Distribution. — Holarctic: two species; Nearctic: six species; Palaearctic: 15 species; Ethiopian: one species; Neotropical: one species.

Section B: Parastigma well developed, medium-sized to large (Fig. 364, 377, 394); 1st discoidal cell truncate anteriorly; cu 3 usually present, distinct; propodeal tubercle rather large (Fig. 378, 390, 396) to small, only absent in *modestus*; precoxal suture usually wide, complete; notauli complete, usually deeply impressed; length of ovipositor sheath 0.22—0.46 times fore wing.

Syn.: *Blacus* Nees; *Goniocormus* Foerster, 1862; *humilis*-group of Haeselbarth, 1973a.

Distribution. — Holarctic: two species; Nearctic: three species; Palaearctic: four species.

Note. Important apomorphous characters are: 1 — propodeal tubercles usually present, seldom indistinctly developed or absent; 2 — propodeal carinae reduced; 3 — medial carina of propodeum indistinctly divided or invisible; 4 — 2nd tergite smooth or with some microsculpture; 5 — antennal segments of ♀ restricted to 17.

Key to Nearctic and Neotropical species of the subgenus *Blacus*

1. Parastigma small (Fig. 300, 327, 339); 1st discoidal cell sharp anteriorly (but sometimes narrowly truncate); propodeal tubercle small or absent . . . section A) 2

— Parastigma large to medium-sized (Fig. 364, 377, 394); 1st discoidal cell more or less truncate anteriorly; propodeal tubercle usually distinct (only in *modestus* absent) . . . . section B) 11

2. Middle lobe of mesoscutum and scutellum remotely punctate (Fig. 303, 309), rather setose; species with stout antenna (Fig. 300) 3

— Middle lobe and scutellum smooth or somewhat punctulate, in the latter case antenna relatively slender (Fig. 346) 4

3. Stemmaticum and upper face punctato-rugose (Fig. 301, 302) . . . . *maryi* f. *nidicola* Hedqvist (p. 226)

— Stemmaticum and upper face smooth (Fig. 307, 308) . . . . *maryi* f. *maryi* Hellén (p. 227)

4. Length of 1st metasomal tergite 2.0 times its apical width (Fig. 317); mesoscutum relatively slender (Fig. 315); length of hind tibia 8.3 times its width; hind femur blotched . . . . *crassicrus* spec. nov. (p. 228)

— Length of 1st tergite 1.4—1.7 times its apical width (Fig. 322, 363); mesoscutum relatively stout (Fig. 362); length of hind tibia more than 8.3 times its width or hind femur smooth 5

5. Length of ovipositor sheath 0.40 times fore wing; r 2 scarcely curved (Fig. 318); length of 1st metasomal tergite 1.7 times its apical width . . . . *cohibilis* spec. nov. (p. 228)

— Length of ovipositor sheath 0.18—0.23 times fore wing; r 2 more or less curved (Fig. 327, 352); length of 1st tergite 1.4—1.6 times its apical width 6

6. Ovipositor distinctly shorter than hind femur; 1st metasomal tergite flattened and widened apicad (Fig. 330, 444), its lateral parts sculptured; scutellar suture with only medial carina distinct, except for more or less distinctly developed microsculpture 7

— Ovipositor usually equal to or longer than hind femur, if somewhat shorter, then sides of 1st tergite about parallel (Fig. 363) and distinctly convex apically; if 1st tergite is flattened apically, then ovipositor longer and lateral parts of 1st tergite almost smooth (Fig. 341); scutellar suture usually with distinct carinae beside medial carina 8

7. Length of body 1.5—1.9 mm, length of malar space ca. twice basal width of mandible

(Fig. 326); cu 1 and veins of hind wing less sclerotized; clypeus distinctly convex in lateral aspect (Fig. 324), smooth . . . . *asaphus* spec. nov. (p. 229)

— Length of body 2.9 mm, length of malar space ca. 1.5 times basal width of mandible (Fig. 441); veins fully sclerotized; clypeus distinctly flattened in lateral aspect (Fig. 440), punctate (Fig. 441) . . . . *chilensis* spec. nov. (p. 243)

8. Dorsal length of temple of ♀ 1.0—1.2 times eye (measured with stemmaticum in optical plane) (Fig. 334, 338), seldom longer, then 1st tergite widened apicad (Fig. 341); length of mesosoma 1.3 times its height 9

— Dorsal length of temple of ♀ 1.3—1.4 times eye (Fig. 347, 359); length of mesosoma 1.3—1.5 times its height; sides of 1st tergite about parallel (Fig. 351, 363) 10

9. Propodeal tubercle sharp, usually distinct; 1st tergite less widened apicad (Fig. 333); latero-apically sculptured and distinctly convex medially . . . . *cognatus* spec. nov. (p. 230)

— Propodeal tubercle indistinct, more or less blunt; 1st tergite more dilated apicad (Fig. 341), latero-apically smooth or nearly so and flattened medially . . . . *defectuosus* Provancher (p. 231)

10. Length of 1st tergite 1.5 times its apical width, relatively wider (Fig. 351), evenly convex and finely reticulate; length of body 2.5—2.6 mm . . . . *rufipes* (Ashmead) (p. 232)

— Length of 1st tergite 1.6 times its apical width, relatively narrower (Fig. 363), unevenly convex and less finely reticulate; length of body 1.6—2.2 mm . . . . *exilis* (Nees) (p. 233)

11. Medial carina of propodeum double dorsally; length of scutellar suture about equal to its width (Fig. 369); length of 1st tergite 1.6 times its apical width and length of ovipositor sheath 0.40 times fore wing . . . . . *apodastus* spec. nov. (p. 234)

— Medial carina of propodeum simple; scutellar suture distinctly wider than long (Fig. 414); combination of length of 1st tergite and of ovipositor sheath different . . 12

12. Scutellum punctulate (Fig. 379); 1st tergite shiny, at most superficially sculptured, comparatively flat (Fig. 380), ca. 1.5 times its apical width; penultimate segments of antenna longer than wide or sub-equal (Fig. 378) . . *masoni* spec. nov. (p. 235)

— Scutellum smooth (at most with some scarcely visible punctures anteriorly); 1st tergite largely dull and sculptured (Fig. 373, 397), convex, 1.4—2.2 times its apical width; penultimate segments variable (Fig. 371, 390, 396) 13

13. Antenna (especially basal segments) compact (Fig. 371, 390), penultimate segments transverse or quadrate; length of 1st tergite 1.4—1.7 times its apical width; propodeal tubercles rather large and blunt (Fig. 371, 390) 14

— Antenna (especially basal segments) comparatively slender (Fig. 396, 410, 416), penultimate segments quadrate or longer than wide; length of 1st tergite 1.8—2.2 times its apical width; propodeal tubercles rather small and sharp (Fig. 396, 404, 419) . . . . *humilis* (Nees) (p. 235)

14. Ovipositor sheath 0.37—0.46 times fore wing (Fig. 390); 3rd antennal segment ca. 1.5 times 4th segment; basal half of antenna yellowish . . . . *caduceus* spec. nov. (p. 237)

— Ovipositor sheath shorter than 0.32 times fore wing (Fig. 371); 3rd antennal segment more or less sub-equal to 4th segment; antenna largely brown . . . . *paganus* Haliday (p. 238)

Key to Palaearctic and Ethiopian species of the subgenus *Blacus* (after Haeselbarth, 1973a, modified)

1. Micropterous, fore wing scarcely surpassing propodeum; propodeal tubercle distinct, sharp . . . . *rufescens* Ruthe (p. 239)

— Macropterous, length of fore wing about equal to body length; propodeal tubercle variable, if present 2

2. Parastigma small (Fig. 300); 1st discoidal cell sharp anteriorly, seldom narrowly truncate; propodeal tubercle small or absent 3

— Parastigma large to medium-sized (Fig. 377, 393); 1st discoidal cell truncate anteriorly; propodeal tubercle large, small or absent 19

3. Subdiscoideus straight basally or nearly so (Fig. 439); cu 3 and propodeal tubercle absent 4

— Subdiscoideus distinctly bent basally (Fig. 396, 410); cu 3 usually present; propodeal tubercle present or absent 5

4. Mesosoma and basal half of metasoma reddish; metacarp somewhat surpassing radial cell (Fig. 439); scutellum smooth (except apically); length of ovipositor sheath 0.27 times fore wing, somewhat longer than hind femur (Ethiopian species) . . . . *inopinus* spec. nov. (p. 242)

— Mesosoma and basal half of metasoma dark brown; metacarp not surpassing radial cell (Fig. 63 in Haeselbarth, 1973a); scutellum superficially rugose; length of ovipositor sheath 0.21 times fore wing, about equal to hind femur (Palaearctic species) . . . . *interstitialis* Ruthe (p. 239)

5. Scutellum with closely spaced and distinct rugae; propodeal tubercle short and blunt; wings brownish; length of ovipositor sheath about equal to fore wing . . . . *hastatus* Haliday (p. 240)

— Scutellum at least medially smooth; propodeal tubercle variable or absent; wings usually hyaline; length of ovipositor sheath about half the length of fore wing or less 6

6. Metacarp not distinctly surpassing radial cell, r 2 weakly but distinctly bent (Fig. 300), usually not reaching wing apex; usually length of ovipositor sheath equal to hind femur or shorter; usually propodeal tubercle indistinct 7

— Metacarp distinctly surpassing radial cell (Fig. 68, 69 in Haeselbarth, 1973a) or r 2 straight or indistinctly bent (Fig. 66, 67, 70 in Haeselbarth, 1973a), usually reaching apex of wing; ovipositor sheath longer than hind femur; propodeal tubercle variable 13

7. Length of ovipositor sheath 1.5—2.0 times 1st metasomal tergite, which is rather weakly reticulato-rugose usually 8

— Length of ovipositor sheath 1.3 times or less 1st metasomal tergite, which is rather densely reticulato-rugose usually 9

8. Antenna very short and stout (Fig. 300), length of 3rd antennal segment ca. 1.5—2.0 times its width; stemmaticum and upper face punctato-rugose (Fig. 301, 302: forma *nidicola* Hedqvist) or smooth (nominate form) . . . . *maryi* Hellén (p. 227)

— Antenna more slender (Fig. 84 in Haeselbarth, 1973a), length of 3rd segment ca. 2.5—3.0 times its width . . . . *instabilis* Ruthe (p. 240)

9. Propodeum almost cuboidal in lateral view, dorsal surface forming an angle of

100—110° with posterior surface; antenna of equal width (Central Asian species) 10

— Propodeum less cuboidal, rounded, angle larger; antenna usually widened apicad 11

10. Antenna rather slender (as Fig. 85 in Haeselbarth, 1973a, but not widened apicad); d 1 distinctly shorter than d 2 . . . . *subquadratus* Papp (p. 240)

— Antenna short, stout (Fig. 89 in Haeselbarth, 1973a); d 1 about equal to d 2 . . . . *tobiae* Haeselbarth (p. 240)

11. Pterostigma and radial cell narrow (cf. Fig. 122 in Haeselbarth, 1973a) . . . . *leptostigma* Ruthe (p. 240)

— Pterostigma and radial cell less narrow (Fig. 78—81 in Haeselbarth, 1973a) . . 12

12. Antenna slender (Fig. 85 in Haeselbarth, 1973a), somewhat widened apicad, length of 10th segment nearly twice its width, penultimate segments somewhat longer than wide . . . . *filicornis* Haeselbarth (p. 240)

— Antenna less slender (Fig. 86—88 in Haeselbarth, 1973a), somewhat widened apicad or not; length of 10th segment ca. 1.5 times its width; length of penultimate segments usually equal to their width . . . . *exilis* (Nees) (p. 232)

13. Propodeal tubercle distinct, rather sharp 14

— Propodeal tubercle absent or indistinctly developed, if distinct (only in *bovistae*) then blunt 15

14. Head in frontal aspect distinctly narrowed ventrad (Fig. 71 in Haeselbarth, 1973a); width of clypeus ca. 3.0 times its height; TOL : ITL = 1 : ± 1.5; length of mesosoma ca. 1.6 times its height . . . . *pappianus* Haeselbarth (p. 240)

— Head in frontal aspect not or indistinctly narrowed ventrad (Fig. 72 in Haeselbarth, 1973a); width of clypeus ca. 4.0 times its height; TOL : ITL = 1 : ca. 2.0; length of mesosoma ca. 1.9 times its height . . . . . *procerus* Haeselbarth (p. 241)

15. Metacarp distinctly surpassing radial cell (Fig. 68, 69 in Haeselbarth, 1973a); length of ovipositor sheath at least 1.5 times hind tibia 16

— Metacarp not surpassing radial cell (Fig. 66, 67 in Haeselbarth, 1973a); length of ovipositor sheath at most 1.3 times hind tibia 17

16. Length of 3rd antennal segment 2.5—3.0 times length of 16th (= penultimate) segment (Fig. 65 in Haeselbarth, 1973a); clypeus wide (Fig. 73, l.c.); anterior tentorial pits at level of undersides of eyes; length of malar space scarcely half time basal width of mandible; propodeal tubercle absent . . . . *nigricornis* Haeselbarth (p. 241)

— Length of 3rd antennal segment ca. 2.0 times 16th segment; clypeus narrower; anterior tentorial pits below level of undersides of eyes; length of malar space about equal to basal width of mandible; propodeal tubercle distinct, short and blunt . . . . *bovistae* Haeselbarth (p. 241)

17. Length of 3rd antennal segment 2.5—3.0 times 16th segment (Fig. 61 in Haeselbarth, 1973a); anterior antennal pits at level of under sides of eyes (Haeselbarth, 1973a: Fig. 74); malar suture present; maler space shorter than basal width of mandible; length of 1st metasomal tergite ca. twice its apical width; length of ovipositor sheath ca. 1.3 times hind tibia . . . . *errans* (Nees) (p. 241)

— Length of 3rd antennal segment ca. twice 16th segment (Fig. 62, 64 in Haeselbarth, 1973a); malar suture absent or present; malar space variable; length of 1st tergite at least 2.5 times its apical width; length of ovipositor sheath 0.9—1.3 times hind tibia 18

18. Malar space somewhat longer than basal width of mandible; malar suture absent; anterior tentorial pits distinctly below level of under sides of eyes (Fig. 76 in Haeselbarth, 1973a); lateral carina of scutellum absent; length of 1st metasomal tergite ca. 2.5 times its apical width; length of ovipositor sheath ca. 1.3 times hind tibia . . . . *stelfoxi* Haeselbarth (p. 241)

— Length of malar space ca. 0.8 times basal width of mandible; malar suture present; anterior tentorial pits only slightly below level of under sides of eyes (Fig. 75 in Haeselbarth, 1973a); lateral carina of scutellum weakly developed; length of 1st metasomal tergite ca. 3.0 times its apical width; length of ovipositor sheath ca. 0.9 times hind tibia . . . . *hostilis* Haeselbarth (p. 241)

19. Propodeal tubercle absent; 1st discoidal cell usually rather narrowly truncate anteriorly (Fig. 54 in Haeselbarth, 1973a) . . . . . . *modestus* Haeselbarth[1]) (p. 241)

— Propodeal tubercle present, short, blunt; 1st discoidal cell widely truncate anteriorly (Fig. 396) 20

20. Scutellar suture beside medial carina with distinctly developed short carinae (Fig. 372); ovipositor sheath shorter than hind tibia 21

— Scutellar suture beside medial carina smooth or with indistinctly developed rugae; ovipositor sheath as long as hind tibia or longer 22

21. Antenna very short, wide (Fig. 371), usually 5th or 6th antennal segment quadrate; length of ovipositor sheath about equal to hind femur (European species) . . . . *paganus* Haliday (p. 238)

— Antenna somewhat more slender (Fig. 50 in Haeselbarth, 1973a); length of ovipositor sheath somewhat more than length of hind femur (Asiatic species) . . . . *radialis* Haeselbarth (p. 241)

22. Antenna short, wide, its basal segments truncate apically, about as wide as apical segments (Fig. 48 in Haeselbarth, 1973a); hind tarsus distinctly shorter than hind tibia; frontal suture distinct; head and mesosoma usually reddish; metasoma, black . . . . *forticornis* Haeselbarth (p. 242)

— Antenna more slender or its basal segments distinctly narrower than its apical segments; length of hind tarsus about equal to hind tibia; frontal suture absent or indistinct; whole body darkly coloured 23

23. Length of 1st metasomal tergite 1.9—2.0 times its apical width, somewhat widened apically (Fig. 397); mesoscutum less slender (Fig. 399); antenna only slightly longer than combined length of head and mesosoma (Fig. 51 in Haeselbarth, 1973a) . . . . *humilis* (Nees) (p. 235)

— Length of 1st tergite ca. 2.6 times its apical width, sides parallel (Fig. 387); mesoscutum more slender (Fig. 386); antenna (Fig. 52 in Haeselbarth, 1973a) distinctly longer than head and mesosoma together . . *longipennis* (Gravenhorst) (p. 242)

Blacus (Blacus) maryi forma **nidicola** Hedqvist, comb. nov. (Fig. 300—305)

Hedqvist, 1974, Ent. Tidskr. 95: 184—185, Fig. 1A—D.

Because the differences with the nominate form are small sculptural differences only, the author considers them not to be of specific value until more biological evidence becomes available.

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[1]) If malar suture is present, parastigma rather small and length of ovipositor sheath ca. 0.48 times fore wing, cf. *errans* (Nees) (17).

Description of a ♀ from Yukon Territory. Length of body 2.7, of fore wing 2.5 mm.

Head. — Antenna short, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 1.9 and 1.3 times their apical width, respectively, penultimate segments quadrate; area in front of occipital carina with widely spaced short crenulae; stemmaticum finely rugose (Fig. 301); frontal suture short, distinct; beside posterior ocelli a deep groove; frons smooth; vertex somewhat punctulate; POL : Ø ocellus : OOL = 4 : 2 : 8; dorsal length of eye 0.7 times temple; face superficially punctato-rugose; clypeus somewhat punctulate; malar suture wanting; length of malar space ca. 1.5 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum almost completely and distinctly reticulate; area behind prepectal carina almost smooth; epicnemial suture finely striate; precoxal suture completely and distinctly reticulate (Fig. 300); metapleural flange large; notauli shallow, completely punctato-reticulate; mesoscutal lobes slightly convex only, lateral lobes bare medially, middle lobe somewhat punctulate (Fig. 303); posterior notaulic area reticulate; scutellar suture long, deep, with one medial carina; lateral carina of scutellum absent; scutellum with closely spaced punctures, except medially (Fig. 303); propodeal tubercle small, rather indistinct; propodeum almost completely reticulate.

Wings. — Parastigma rather small; r 2 straight; d 1 : d 2 = 5 : 11; metacarp short (Fig. 300); 1st discoidal cell sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.4, 7.8 and 7.0 times their width, respectively; coxa and femur of hind leg distinctly rugose.

Metasoma. — Length of 1st tergite 1.6 times its apical width, distinctly reticulate in apical half (Fig. 305), dorsal carinae distinct in basal half only; length of ovipositor sheath 0.26 times fore wing.

Colour. — Dark reddish brown, but some parts almost black; clypeus, mandibles, anellus, legs and metasoma ventrally reddish yellow; metasoma dorsally more or less reddish; tegulae, pterostigma and palpi, brown.

Holotype in Hedqvist Collection, Stockholm: "från utgravt bo av *B. lapponicus*, T. Lpm., Abisko, 9/8.1972", "Holotypus ♀ *Blacus nidicola* sp. n. K-J. Hedqvist, det. 1974", "20/75", "Riksmuseum Stockholm". Through the kindness of Mr. Hedqvist I could examine this holotype and one paratype, both from nests of *Bombus lapponicus* F. in N. Sweden. The holotype has r 2 somewhat more curved (Fig. 1C in Hedqvist, 1974), but in the not figured left wing it is less pronounced and the scutellum is flatter (but not in the paratype). Length of 3rd antennal segment 1.3 times 4th segment, length of 3rd and 4th segments 1.8 and 1.6 times their width, respectively, apical segments almost quadrate; length of femur, tibia and basitarsus of hind leg 3.6, 6.2 and 6.5 times their width, respectively; length of ovipositor sheath 0.28 times fore wing. Further specimens examined: 2 ♀; "14 mi. E. Dawson, Y.T., 1300 (ft), 6.viii.1962, leg. P. J. Skitsko" (figured, CNC); "Ft. Churchill, Man., 28.vii.1952, J. G. Chillcott" (AC).

Blacus (Blacus) maryi forma **maryi** Hellén (Fig. 306—311)

Hellén, 1958, Fauna Fennica 4: 23.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 22.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 152—153, Fig. 83.

Length of body 2.4—2.6, length of fore wing 2.3—2.4 (according to Haeselbarth, l.c. to 2.6) mm; length of 3rd antennal segment 1.3 times 4th segment, length of 3rd and 4th segments 1.8—2.0 and 1.5 times their width, respectively; stemmaticum smooth; face smooth, except for some superficial rugae near antennal sockets; precoxal suture may be more or less reduced anteriorly (Fig. 306); scutellum punctulate or almost smooth; r 2 evenly bent (in figured specimen weakly sclerotized, as metacarp); length of femur, tibia and basitarsus of hind leg 4.3—4.5, 7.8—8.5 and 6.0—7.0 times their width respectively; length of 1st metasomal tergite 1.5—1.6 times its apical width; figured specimen has tergites with margins membranous apically.

Examined ♀ specimens: "Pete Lake, B.C., 57°56′—131°56′, 16.viii.1960, W. W. Moss, 4000′ (ft)" (CNC, figured); "West Chicago Cr. 9800′ (ft), Clear Cr. Co., Colo., ii-viii.1961, B. H. Poole" (CNC), mesoscutum more setose, precoxal suture complete, length of ovipositor sheath 0.29 times fore wing; "Mc. Murray, Alta, 13.viii.1953, G. E. Ball" (AC); St. Peter im Tal Ahrntal, Südtirol, 2200 m, 26.viii.1967, det. Haeselbarth (HC).

Note. In Europe this species has a boreo-montane distribution (Haeselbarth, 1973a).

Blacus (Blacus) crassicrus spec. nov. (Fig. 312—317)

Holotype, ♀, length of body and of fore wing 2.2 mm.

Head. — Antenna moniliform, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 1.8 and 1.4 times their width, respectively, penultimate segments wider than long (Fig. 312); area in front of occipital carina distinctly crenulate; POL : Ø ocellus : OOL = 3 : 2 : 5; dorsal length of eye 0.8 times temple (Fig. 313); face and clypeus smooth as vertex and frons; frontal suture absent; length of malar space ca. 1.5 times basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma 1.5 times its height, side of pronotum rather remotely reticulate except for dorsal fifth (Fig. 312); zone behind prepectal carina crenulate; epicnemial suture almost smooth; precoxal suture absent anteriorly, medially with a few striae (Fig. 312); mesoscutal lobes slightly convex, slender; notauli shallow, posteriorly with double groove, and almost invisible, fine crenulae; scutellar suture rather deep, with three weakly developed ridges; scutellum smooth, lateral carina absent; propodeal tubercle small, placed low; propodeum distinctly reticulate, but both triangular basal areas smooth.

Wings. — Parastigma small; r 2 slightly bent; d 1 : d 2 = 1 : 1.1; 1st discoidal cell sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.2, 8.3 and 5.8 times their width, respectively; hind coxa rugose dorso-basally, hind femur blotched.

Metasoma. — Length of 1st tergite 2.0 times its apical width, surface weakly reticulate, very convex in basal half, dorsal carinae distinct in basal two-thirds; length of ovipositor sheath 0.25 times fore wing; metasoma compressed in apical half.

Colour. — Dark blackish brown; mandible, base of scapus, pedicellus, annellus, legs and pterostigma, yellowish brown; coxae and femora darkened.

Holotype ♀ in CNC, Ottawa: "Mex., Dgo., 9000′ [ft], El Salto, 10 mi. W, 2.vii. 1964, W. R. M. Mason".

Blacus (Blacus) cohibilis spec. nov. (Fig. 318—323)

Holotype, ♀, length of body 2.5, length of fore wing 2.2 mm.

Head. — Antenna relatively slender, length of 3rd segment 1.5 times 4th segment, length of 3rd and 4th segments 3.8 and 2.6 times their width, respectively, penultimate segments quadrate; area in front of occipital carina crenulate; frontal suture short; POL : Ø ocellus : OOL = 10 : 5 : 12; dorsal length of eye 0.6 times temple (Fig. 321); frons and vertex smooth; face smooth, except for some superficial rugosity, found below antennal sockets and near bases of mandible; clypeus smooth except some superficial punctures; malar suture absent; length of malar space ca. 1.5 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulate except dorsal fifth; zone behind prepectal carina crenulate; epicnemial suture transversely striate, ventrally more rugose; precoxal suture complete, reticulato-rugose (Fig. 318); mesoscutal lobes rather convex, only medially setose; notauli rather shallow, completely crenulate, widening apicad, resulting in a longitudinal, rugose area; scutellar suture deep, with three medium-sized carinae; scutellum reticulate apically, smooth anteriorly, lateral carina indiscernable from lateral reticulation; propodeal tubercle small, stout; dorsal surface of propodeum anteriorly nearly smooth, medial carina distinct, its posterior surface reticulate (Fig. 322).

Wings. — Parastigma small; r 2 slightly bent, almost straight; d 1 : d 2 = 1 : 2.0 (Fig. 318); 1st discoidal cell narrowly truncate, almost sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.3, 10.9 and 6.7 times their width, respectively; its femur almost smooth, its coxa reticulato-rugose dorsally.

Metasoma. — Length of 1st tergite 1.7 times its apical width, surface punctate in apical half, punctato-rugose in basal half, dorsal carinae converging, coalescent at level of spiracle; length of ovipositor sheath 0.40 times fore wing, apical half of metasoma strongly compressed.

Colour. — Brownish black; metasoma (except 1st segment), face, tegula, pterostigma, apical half of antenna and palpi, brown; mandible, base of antenna and legs, brownish red.

Holotype ♀ in CNC, Ottawa: "Ft. Davis, Texas, Limpia Cn., 5000′ [ft], 30.v.1959, W. R. M. Mason".

Note. Related to the Palaearctic *errans*, but the latter has malar space shorter (Fig. 74 in Haeselbarth, 1973a), anterior antennal pits between eyes, 1st discoidal cell wider (Haeselbarth, 1973a, Fig. 67), nervulus more basal and 1st metasomal tergite less slender.

Blacus (Blacus) asaphus spec. nov. (Fig. 324—330)

Holotype, ♀, length of body 1.9, length of fore wing 1.8 mm.

Head. — Antenna rather slender, length of 3rd antennal segment 1.4 times 4th segment, length of 3rd and 4th segments 3.0 and 2.1 times their width, respectively, penultimate segments somewhat longer than their width; area in front of occipital carina almost smooth; POL : Ø ocellus : OOL = 3 : 2 : 4; dorsal length of eye 0.9 times temple (Fig. 325); face, clypeus, frons and vertex smooth; malar and frontal sutures absent; length of malar space about twice basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulate; zone behind prepectal carina somewhat crenulate, indistinct; epicnemial suture finely striate; precoxal suture narrow, almost smooth (Fig. 324); mesoscutal lobes rather convex; notauli shallow, complete, punctate; scutellar suture deep, with one medial carina distinct only; scutellum smooth, its lateral carina complete, distinct; propodeal tubercle small; propodeum finely reticulate except for both basal narrow smooth areas.

Wings. — Parastigma small; r 2 evenly bent; d 1 : d 2 = 1 : 1.1; cu 1 and veins of hind wing less sclerotized than other veins; 1st discoidal cell sharp anteriorly or nearly so.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.2, 10.3 and 6.0 times their width, respectively; hind femur smooth; hind coxa rugose dorso-basally.

Metasoma. — Length of 1st tergite 1.4 times its apical width, whole surface reticulate, dorsal carinae distinct in basal half, flattened and widened apicad; length of ovipositor sheath 0.18 times fore wing, distinctly shorter than hind femur.

Colour. — Dark reddish brown; basal half of antenna, palpi, legs and pterostigma, yellowish.

Holotype ♀ in CNC, Ottawa: "5 mi. S.W. Shilo, Man., 13.viii.1953, J. G. Chillcott". Paratypes: "Lockeport, N.S., 31.vii.1958, leg. J. R. Vockeroth" (AC), length of body 1.5 mm, length of 3rd segment 1.6 times 4th segment of antenna; "Swift Current, Sask., 16.ix.1940, A. R. Brooks" (CNC); id., but 17.ix.1940 (CNC); "Winnipeg, Man., Sep. 10, 1942, S. Buckwold" (AC).

Note. Much resembles *exilis* and *filicornis* but differs by the shape of the 1st metasomal tergite. Differs from *rufipes* by more convex clypeus, flatter 1st metasomal tergite and shorter temples.

Blacus (Blacus) cognatus spec. nov. (Fig. 331—336)

Holotype, ♀, length of body and of fore wing 2.3 mm.

Head. — Antenna moderately stout, length of 3rd segment 1.3 times 4th segment; length of 3rd and 4th segments 3.1 and 2.5 times their width, respectively, penultimate segments somewhat longer than their width; area in front of occipital carina crenulate; POL : Ø ocellus : OOL = 4 : 2 : 4; dorsal length of eye 0.9 times temple (Fig. 334); face, clypeus, vertex and frons smooth; frontal and malar sutures absent; length of malar space ca. 1.5 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum reticulato-rugose, except for dorsal one-tenth; zone behind prepectal carina crenulate; epicnemial suture with some striae; precoxal suture narrow, rugose (Fig. 331); mesoscutal lobes rather convex; notauli deep, finely crenulate, posteriorly forming a triangular, longitudinally striate area; scutellar suture deep, with three medium-sized carinae; scutellum smooth, its lateral carina incomplete and almost invisible; propodeal tubercle small, sharp; dorsal surface of propodeum finely transversely wrinkled, rugose, except for both small areas basally (Fig. 333).

Wings. — Parastigma small; r 2 bent basad but apical half straight; d 1 : d 2 = 1 : 0.7; 1st discoidal cell sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.6, 10.0 and 8.0 times their width, respectively; hind femur weakly rugose; hind coxa reticulato-rugose dorso-basally.

Metasoma. — Length of 1st tergite 1.5 times its apical width, striato-reticulate, dorsal carinae almost complete, posteriorly with smooth, distinct tubercle; length of ovipositor sheath 0.22 times fore wing.

Colour. — Dark reddish brown; antenna (except basal half), tegulae, metasoma (except 1st tergite), palpi and pterostigma, light brown; legs, mandible and basal half of antenna, brownish yellow; coxa darkened.

Holotype ♀ in CNC, Ottawa: "Ramsey Cyn., 6000′ (ft), 15 mi. S. Sierra Vista, Huachuca Mts., Ariz., Sternizky, 10.v.1967". Paratypes: 1 ♀, "Indian Head, Sask., 6.ix.1927, Kenneth Stewart" (AC); 1 ♀, "State Nurs., Boscobel Grant Co., Wisc., USA, vi-12-1953, coll. R. D. Shenefelt", "light trap Barber's Sol", 1st metasomal tergite finely reticulate, as *rufipes* but with slender shape of *cognatus* (SC); 2 ♀ from Wood Co., Wisc., Nekoosa, ix-1-1948, W. W. Barrett, light trap (AC, SC), propodeal tubercle relatively indistinct and 1st tergite somewhat less slender.

Note. From the type-locality one ♂ (25.vi.1967) which is almost certainly conspecific, antennal segments 21.

Blacus (Blacus) defectuosus Provancher (Fig. 337—345)

Provancher, 1886, Addit. Faune Can.: 133.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.

Holotype, ♀, length of body 2.7, length of fore wing 2.5 mm.

Head. — Antenna relatively slender, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 3.7 and 2.6 times their width, respectively (in other specimens examined 2.9—3.3 and 1.9—2.4 times, respectively), apical segments broken off (but in specimens examined penultimate segments somewhat longer than wide (Fig. 343)); area in front of occipital carina finely crenulate; dorsal length of eye 0.9 times temple; frontal suture short, indistinct; POL : Ø ocellus : OOL = 5 : 3 : 7; frons, vertex and clypeus smooth, face nearly smooth (in other specimens often transversely rugose below antennal sockets); malar suture indistinct, almost absent; length of malar space ca. 1.5 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum rather weakly reticulato-rugose, except for dorsal fifth (Fig. 337); zone behind prepectal carina crenulate; epicnemial suture almost smooth; precoxal suture complete, rather narrow and weakly reticulato-rugose (Fig. 337); mesoscutal lobes rather convex; notauli complete, rather deep and crenulate, with small rugose area apically; scutellar suture deep, with one carina besides some rugosity; scutellum smooth but apical third reticulato-rugose, its lateral carina present basally only; propodeum transversely rugose dorsally, medial carina distinct and both basal areas smooth; propodeal tubercle small, rather sharp, relatively blunt as compared to *cognatus*.

Wings. — Parastigma rather small; r 2 distinctly bent basally and slightly sinuate apically; d 1 : d 2 = 1 : 1.3; 1st discoidal cell more or less narrowly truncate anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 6.9, 10.9 and 9.0 times their width, respectively, its femur superficially rugulose, its coxa reticulato-rugose dorsobasally.

Metasoma. — Length of 1st tergite 1.5 times its apical width, flattened apicad, surface reticulato-rugose medially but apical fifth almost smooth, especially lateral parts, dorsal carinae distinct in basal half, spiracle protruding; length of ovipositor sheath 0.23 times fore wing.

Colour. — Reddish brown; antenna, palpi, 2nd and 3rd metasomal tergites, hind coxa and ovipositor sheath, brownish yellow; pterostigma, tegulae, mandible and legs (except hind coxa), yellow.

Holotype ♀ in PC, Quebec: "734/1287" (from Ottawa).

Specimens examined: all ♀; Sask., Saskatoon and Swift Current, 7, 9 and 17 ix.1940; Utah, Garfield Co., Escante, light trap, 15.vii.1958; Colo., Denver Fed. Center, light trap, 22.vi.1958; Ont., Moose Factory, 27.viii.1959 (CNC, SC, AC). A ♀ from Wood Co., Wis., Ft. Edwards, 7.ix.1948, light trap (SC) has relatively slender antenna and propodeal tubercle indistinct.

Blacus (Blacus) rufipes (Ashmead) (Fig. 346—351)

Ashmead, (1888) 1889, Proc. U.S. natn. Mus. 11: 626 (as *Dimeris*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 24.

Holotype, ♀, length of body 2.5 (—2.6 in figured specimen), length of fore wing 2.4 (—2.5) mm.

Head. — Antenna relatively slender, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 2.8 (—3.0) and 2.0 (—2.4) times their width, respectively, apical segments in both specimens broken off; area in front of occipital carina finely crenulate; POL : Ø ocellus : OOL = 6 : 2 : 6; dorsal length of eye 0.7 times temple (Fig. 347); clypeus, frons and vertex smooth; face smooth but with some microsculpture near antennal sockets; frontal and malar sutures absent; length of malar space ca. twice basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height, side of pronotum reticulate except for dorsal margin; zone behind prepectal carina crenulate; epicnemial suture striate; precoxal suture complete, distinctly rugose (in figured specimen rather shallow, Fig. 346); mesoscutal lobes slightly convex, somewhat punctulate in holotype only; notauli complete, rather shallow, almost smooth, except for some micro-sculpture, widened apicad; scutellar suture deep, one distinct and two weaker and shorter carinae; scutellum smooth, its lateral carina absent except for some remains apicad; propodeal tubercle small, sharp; dorsal surface of propodeum finely reticulato-rugose, medial carina distinct and both basal areas smooth (Fig. 351).

Wings. — Parastigma small; r 2 slightly bent basad (in figured specimen more distinct than in holotype); d 1 : d 2 = 1 : 1 (—1.7); 1st discoidal cell sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.6 (—5.4), 8.4 (—10.5) and 7.0 (—8.7) times their width, respectively; hind femur rugose; hind coxa reticulato-rugose dorso-basally.

Metasoma. — Length of 1st tergite 1.4 (—1.5) times its apical width, rather flattened medially, finely and closely reticulate (figured specimen with smooth apical tubercle, not in holotype), dorsal carinae rather indistinct, visible in basal third only; length of ovipositor sheath (0.19-)0.22 times fore wing.

Colour. — Dark reddish brown; head, antenna, legs and metasoma (except 1st tergite), reddish; palpi whitish; tegulae apically and pterostigma, light brown.

Holotype ♀ in USNM, Washington: "69", "May Webster", "unique", "Thro C. V. Riley 1888", "type", "collection Ashmead", "Type No. 58841 USNM", "*Dimeris rufipes* Ashm". The type-locality is Indiana.

Specimen figured: "Swift Current, Sask., 18.ix.1940, A. R. Brooks" (CNC).

Note. Differs from the Palaearctic *pappianus* by shorter ovipositor sheath, smaller propodeal tubercle, and more robust first metasomal tergite. Differs from *maryi* by the relatively slender antenna and apically sharper and larger propodeal tubercle.

Blacus (Blacus) exilis (Nees) (Fig. 352—363)

Nees von Esenbeck, (1811) 1812, Mag. Ges. nat. Fr. Berl. 5: 19 (as *Bracon*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 19—20.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 61: 157—161, Fig. 79—81, 86—88, 116, 121.
Fitch, (1854) 1855, Trans. N.Y. St. agric. Soc. 14: 840 (*Aphidius lactucaphis*). Syn. nov.
Foerster, 1862, Verh. naturh. Ver. preuss. Rheinl. 19: 237 (*Miocolus pallipes*) (nec Haliday, 1835, Ent. Mag. 3: 41).
Ashmead, 1905, in: Nason, Ent. News 16: 294 (*Blacus nanus*), nom. nud. Syn. nov.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 23 (*Blacus propallipes*).

A very variable Holarctic species. ♀ length of body 1.6—2.2, length of fore wing 1.6—2.4 mm.

Head. — Antenna moderately stout, length of 3rd segment 1.2—1.5 times 4th segment, length of 3rd and 4th segments 2.3—2.8 and 1.7—2.2 their width, respectively; length of penultimate segments about equal to or somewhat more than their width; area in front of occipital carina crenulate; POL : Ø ocellus : OOL = 3.5—6 : 2 : 3—6; dorsal length of eye 0.7 times temple (Fig. 359); frons, vertex, clypeus and face smooth; malar and frontal sutures absent; length of malar space ca. twice basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum almost smooth dorsally, with weak rugae ventrad; zone behind prepectal carina crenulate; epicnemial suture almost smooth, except for some striae dorsally; precoxal suture narrow, shallow, often reduced (Fig. 358, 352); mesoscutal lobes slightly convex; notauli rather deep, crenulate, often weakly developed; scutellar suture rather deep, with one distinct and two less developed and shorter carinae; scutellum smooth, but apical 0.3 finely reticulate, its lateral carina more or less distinctly developed; propodeal tubercle small, sharp; dorsal surface of propodeum smooth basally, posteriorly shallowly sculptured.

Wings. — Parastigma small; r 2 evenly bent; d 1 : d 2 = 1 : 1.0—1.3 (but specimen from Payne Bay 1 : 3.8, Fig. 352); 1st discoidal cell more or less sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.6—5.8, 9.0—10.6 and 7.2—9.0 times their width, respectively; hind femur almost smooth; hind coxa rugose dorso-basally.

Metasoma. — Length of 1st tergite 1.6 times its apical width, surface distinctly reticulate, with apical tubercle smooth, dorsal carinae distinctly developed in basal four-fifths; length of ovipositor sheath 0.20—0.24 times fore wing.

Colour. — Reddish or dark brown; mandible, palpi, antenna and legs, brownish yellow (some specimens also metasoma except for 1st tergite); pterostigma brown.

Specimens examined: Nearctic: all ♀; Colorado (Summit L., 12,800 ft, Mt. Evans); Illinois (Algonquin); North Carolina (Highlands); Iowa (Sioux City, figured); Wisconsin (Door Co; Sturgeon Bay; Nekoosa; Douglas Co., Gordon Nusery; Dane Co.; Cranmore); Quebec (Harrington L.; Lanicle); Ontario (Ottawa; Trenton; Innisville); British Columbia (Cowichan L.).

Aberrant specimens: Payne Bay, Quebec, 2.viii.1958, W. R. M. Mason (Fig. 352—357); Summit Lake, British Columbia, mi 392 Alaska Hwy, 19-21.viii.1958, 4200 ft, R. E. Leech and from Alaska, Kotzebue, 420′ (ft), 14.viii.1958, Lindroth. The latter specimen has the 1st discoidal cell petiolate and r 2 straight.

Distribution in Palaearctic region. In the Netherlands common at Waarder, Zuid-Holland; seldom collected in a holm at Asperen (Zuid-Holland) and Oostwold (Groningen). Snellen van Vollenhoven (1876: 240) recorded it from Naaldwijk (Zuid-Holland). From France a large series (22 ♀, 31 ♂) was examined from a mouldy grass heap with many Staphylinidae (Dordogne, Cénac, St. Julien, 23.vi-15.vii.1974, P. Kanaar). Specimens with antenna as in *filicornis* occur together with typical *exilis* and intermediate specimens (numbers of ♀: 6, 9 and 5, respectively). See note under *filicornis*.

Notes. The only biological evidence in the Nearctic region is indirect: Ex Douglas fir cone or from cones of *Tsuga heterophylla* (Cowichan L., British Columbia, 19 and 22.ix.1958 and 20.ix.1940); in hollow sumac (= *Rhus* spec., Ottawa, Ontario, 4.x. 1970); one ♀ (Quaintance No. 5791) in USNM bred from No. 5702 (?). 1 ♀ in SC (Dane Co., Wisconsin, xii.1, 1956, coll. P. A. Jones) was collected indoors, which indicates that the adult ♀ hibernate; this is also known from the European literature.

The holotype of *lactucaphis* is a ♂ of *exilis* with 19 antennal segments. It bears the labels: "Type No. 1821 USNM", "From Fitch collection", "*Aphidius lactucaphis*" and *Blacus lactucapis* (sic!) Fitch". The type locality is New York.

The No. 15771 of the Ashmead Collection bears a MS-label "*Blacus nanus* Ashm., ♀" which almost certainly refers to the nomen nudum published by Ashmead in Nason (1905).

Blacus (Blacus) apodastus spec. nov. (Fig. 364—370)

Holotype, ♀, length of body 2.3, length of fore wing 1.9 mm.

Head. — Antenna relatively slender, length of 3rd segment 1.1 times 4th segment, length of 3rd and 4th segments 2.6 and 2.2 times their width respectively, penultimate segments longer than wide; dorsal length of eye 0.9 times temple; POL : Ø ocellus : OOL = 4 : 1 : 5; frontal and malar sutures absent; narrow area in front of occipital carina crenulate; clypeus, vertex and frons smooth; face smooth but near antennal sockets somewhat rugose; malar space somewhat longer than basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulate except dorsal fifth; zone behind prepectal carina with one short carina only; epicnemial suture finely, longitudinally punctato-rugose; precoxal suture complete, finely punctato-rugose (Fig. 364); metapleural flange scarcely visible, blunt; notauli crenulate in basal half, almost smooth apically; length of scutellar suture almost equal to its width (Fig. 369), rather deep, with one weakly developed carina; scutellum smooth, its lateral carina absent; propodeal tubercle small, blunt; propodeum almost smooth anteriorly, reticulate posteriorly, with two closely situated, parallel medial carinae (Fig. 370).

Wings. — Parastigma rather large; r 2 slightly bent, slightly sclerotized apicad; d 1 : d 2 = 4 : 15; 1st discoidal cell widely truncate anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.6, 8.3 and 7.5 times their width, respectively; hind femur almost smooth, hind coxa finely reticulate dorsally.

Metasoma. — Length of 1st tergite 1.6 times its apical width, longitudinally punctato-rugose, flattened apicad, dorsal carinae distinct in basal two-fifths; length of ovipositor sheath 0.40 times fore wing.

Colour. — Dark brown; metasoma and antenna largely, face and pterostigma, brown; legs, mandible, palpi and tegulae, yellowish brown; wing veins weakly coloured, only costa and pterostigma brown.

Holotype ♀ in CNC, Ottawa: "Innisville, Ont., 25.vii.1963, W. R. M. Mason".

Note. Related to the Palaearctic *leptostigma*, but the latter species has a smaller parastigma and anteriorly sharp 1st discoidal cell (Fig. 122 in Haeselbarth, 1973a).

Blacus (Blacus) masoni spec. nov. (Fig. 378—384)

Holtoype, ♀, length of body 3.7, length of fore wing 3.3 mm.

Head. — Antenna moderately slender, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 2.0 and 1.6 times their width, respectively, penultimate segments distinctly longer than wide; dorsal length of eye 0.6 times temple; POL : Ø ocellus : OOL = 7 : 3 : 7; frontal suture shallow; vertex distinctly punctulate; frons and clypeus remotely punctulate; face distinctly punctato-rugose, medially and laterally less developed (Fig. 381); malar suture absent; area in front of occipital carina crenulate; length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.5 times height; side of pronotum reticulate except for dorsal third; zone behind prepectal carina crenulate; epicnemial suture reticulato-rugose; precoxal suture deep, distinctly rugoso-reticulate; metapleural flange medium-sized; notauli narrow, finely punctato-crenulate; mesoscutal lobes punctate, apical margin sinuate (Fig. 379); scutellar suture subtriangular, with three carinae; scutellum punctulate, its lateral carina absent; propodeal tubercle rather large, propodeum with both basal areolae smooth, posterior surface reticulate.

Wings. — Parastigma large; r 2 straight; d 1 : d 2 = 8 : 18; 1st discoidal cell widely truncate anteriorly; aqu 1 (and sometimes 2) weakly indicated.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.4, 8.3 and 8.3 times their width, respectively; hind femur superficially reticulato-rugose; hind coxa reticulate dorso-anteriorly.

Metasoma. — Length of 1st tergite 1.5 times its apical width, smooth except for some lateral and apical microsculpture (Fig. 380), dorsal carinae almost absent; apical tergites with narrow membranous margins; length of ovipositor sheath 0.26 times fore wing.

Colour. — Brownish black; scapus, pedicellus, annellus, palpi, mandible and labrum, brownish yellow; clypeus, tegulae, pterostigma and metasoma, brown.

Holotype ♀ in CNC, Ottawa: "Quebec, Old Chelsea, Summit King Mt., 1150 (ft), 22.viii.1965, J. R. Vockeroth", "*Blacus* s.l., primitive, note 2 anals in f.w., det. W. R. M. Mason 73". Paratypes: "B.C., Gagnon Rd., 6 mi. W. Terrace, 13.vii.1960, G. E. Shewell" (AC); "B.C., Hixon, 25.vii.1965, E. D. A. Dyer" (CNC); "Colo., Doolittle Ranch, 9800 (ft), Mt. Evans, 3.viii.1961, C. H. Mann" (CNC); "Wis., Vilas Co., Trout Lk, Nursery, 29.viii.1957, R. D. Shenefelt" (SC); "Alta., Edmonton, 14-17.viii. 1949, W. R. M. Mason" (2 ♀, CNC, AC); "Robson, B.C., 10-16.vii.1947, H. R. Foxlee" (CNC); "Oberon Man., reared from nest of *Bombus ternarius* (in lab), 22.ix. 54, T. V. Cole" (AC); "Brandon, Man., T. V. Cole, reared from colony *B. ternarius*, 25.x.54 (in lab)" (CNC).

It is a great pleasure to dedicate this species to Dr. W. R. M. Mason for his substantial help in many ways.

Blacus (Blacus) humilis (Nees) (Fig. 396—432)

Nees von Esenbeck, (1811) 1812, Mag. Ges. nat. Fr. Berl. 5: 19, Fig. (as *Bracon*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 21.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 128—130, Fig. 46, 51, 55.
Haliday, 1835, Ent. Mag. 3: 122 (*Blacus trivialis*).

Described after figured specimen from White Fox, Sask, ♀, length of body 2.3, length of fore wing 2.2 mm.

Head. — Antenna moderately slender, length of 3rd segment 1.1 times 4th segment, length of 3rd and 4th segments 2.3 and 1.9 times their width, respectively, penultimate segments slightly longer than wide; dorsal length of eye 0.7 times temple; POL : Ø ocellus : OOL = 9 : 4 : 10; frontal and malar sutures absent; area in front of occipital carina crenulate; frons, vertex and clypeus smooth; face superficially rugose partially (Fig. 401); length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum largely reticulate; zone behind prepectal carina crenulate; epicnemial suture longitudinally reticulato-rugose, as precoxal suture (Fig. 396); metapleural flange large; notauli crenulate anteriorly, nearly smooth posteriorly; scutellar suture reticulato-rugose, wide, deep, with three weakly developed carinae; scutellum smooth, its lateral carina indistinct; propodeal tubercle small; surface of propodeum largely reticulate.

Wings. — Parastigma rather large; r 2 almost straight; d 1 : d 2 = 10 : 16; 1st discoidal cell wide anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.4, 9.2 and 7.4 times their width, respectively; hind femur pimply; hind coxa rugose dorsally.

Metasoma. — Length of 1st tergite 1.8 times its apical width, finely reticulate, dorsal carinae distinct in basal third; length of ovipositor sheath 0.33 times fore wing.

Colour. — Dark brown; palpi, labrum, mandible, antenna basally, tegulae and legs, yellowish brown; pterostigma brown.

Specimens examined from Saskatchewan (White Fox: Fig. 396, 397, 400—403); California (Sta. Cruz: Fig. 404—409, slender mesoscutum and smooth face); West Virginia (Cacapon: Fig. 410, 411, 414, 415, 418); New York (Cranberry Lake: Fig. 426—432); Mexico (W. La Cuidad, 7000 ft: Fig. 419—425; N. Bochil, 7000 ft (very slender 1st tergite and blackish antenna); El Salto, 9000 ft); Arizona (Ramsey Cyn., 6000 ft); Oregon (Hillsboro); Colorado (West Chicago Cr., 9800 ft); New Hampshire (Alpine Garden, 5200—5600 ft); North Carolina (Gr. Smoky Mts., 5200 ft); Wisconsin Nekoosa, partly at light); British Columbia (Hixon; Terrace; Robson); Alberta (Banff, 4700 ft; Lancester Park; Aspen Beach); Ontario (Sittsville, Maynooth; Island Fall); Quebec (Old Chelsea, 1150 ft: Fig. 412, 416, 417; Nomingue); North West Territories (Norman Walls); Alaska (Unalakeet) (USNM, CNC, SC, AC).

Notes. The material was mostly collected in August and, less frequently, in June, July, September and October.

This species can be separated from the Palaearctic *longipennis* by the shape of the 1st metasomal tergite (Fig. 417 versus Fig. 387) and of the mesonotum (Fig. 414 versus Fig. 386).

The variation in the material is considerable: length of 3rd antennal segments 1.1—1.3 times 4th segment; length of 3rd and 4th segments 2.2—2.9 and 1.9—2.2 times their width, respectively; length of mesosoma 1.4—1.5 times its height; length of femur, tibia and basitarsus of hind leg 4.6—5.1, 8.2—10.4 and 7.3—8.2 times their width, respectively; length of 1st tergite 1.9—2.2 times its apical width; length of body 2.2—2.7 mm; length of fore wing 2.1—2.3 mm; length of ovipositor sheath 0.32—0.43 times fore wing.

I have thoroughly tried to split up this complex but no satisfactory separation into species was possible; to indicate the variability some forms are figured.

The Palaearctic specimens examined usually have the 1st tergite somewhat less slender (Fig. 398).

In the Netherlands the species is rather common in the middle of the country: Otterlose Bos (probably ex *Cryptophagus lycoperdi*), Putten, Rhenen (from mushroom) and Ede (all Gelderland) and Drunen (Noord-Brabant), found together with *C. lycoperdi* in mushroom.

Blacus (Blacus) caduceus spec. nov. (Fig. 385, 390—395)

Holotype, ♀, length of body 2.8, length of fore wing 2.7 mm.

Head. — Antenna stout, length of 3rd segment 1.5 times 4th segment, length of 3rd and 4th segments 2.2 and 1.5 times their width, respectively, penultimate segments quadrate or transverse (Fig. 390); dorsal length of eye 0.7 times temple; POL : Ø ocellus: OOL = 10 : 7 : 11; frontal and malar sutures absent; area in front of occipital carina distinctly crenulate; frons, vertex and clypeus smooth; face transversely rugose; length of malar space about equal to basal width of mandible.

Mesosoma. — Length of mesosoma 1.5 times its height; side of pronotum reticulate, except for dorsal one-fifth; zone behind prepectal carina crenulate; epicnemial suture rugoso-reticulate; precoxal suture wide anteriorly, distinctly rugoso-reticulate (Fig. 390); metapleural flange large; notauli crenulate basad but indistinct apically (Fig. 385); scutellar suture wide, rather shallow, with one distinctly and two weakly developed carinae, surrounded by rugae (Fig. 385); scutellum smooth, its lateral carina indistinct (but in some paratypes more distinct), slightly protruding apically; propodeal tubercle large, rather blunt; propodeum reticulate.

Wings. — Parastigma large; r 2 slightly bent; d 1 : d 2 = 13 : 25; 1st discoidal cell rather widely truncate anteriorly; aqu 1 weakly developed.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.2, 8.1 and 5.3 times their width, respectively; hind coxa and femur rugose.

Metasoma. — Length of 1st tergite 1.7 times its apical width, longitudinally reticulato-rugose, dorsal carinae distinct in basal 0.2; length of ovipositor sheath 0.46 times fore wing (in large specimens it may be 0.40—0.42 times).

Colour. — Dark brown; basal half of antenna, clypeus, labrum, mandible and tegulae, brownish yellow; palpi whitish yellow.

Holotype ♀ in USNM, Washington: "Lost River St. Pk., Hardy Co., W. Virginia, Aug. 1-14, 1960, Karl V. Krombein". Paratypes (all ♀): from: Ohio (Jerusalem); Pennsylvania (No. 2015 in Baker Coll.); Arkansas (Hot Springs Nat. Park); South Dakota (Hill City, light trap, length of body 3.5 mm); New Hampshire (Durhan (black light trap, length of body 3.1 mm)); British Columbia (Oliver; Keremeos (1600 ft, 1st tergite finely rugose); Lac la Hache (2800 ft, as Keremeos specimen); Lytton (800 ft, mesoscutum and mesosternum reddish)); Alberta (Johnston Canyon (4700 ft)); Michigan (Norway); Georgia (Rabun Co.); North Carolina (Highlands (some have dorsal carinae of 1st tergite reduced, others almost complete)); Colorado (West Chicago Cr., Clear Cr. Co. (9800 ft, length of ovipositor sheath 0.37 times fore wing, length of 1st tergite 1.5 times its apical width, length of body 3.4 mm)); Illinois (White Heath (antenna somewhat more slender)); Delaware (Wilmington (antenna somewhat more slender)); Oregon (Indian Ford, 6 mi. N.W. Sisters Deschutes Co. (3200 ft, black light)); Washington (D.C.) (at light); Wisconsin (Wood Co., Griffith St.

Nursery, Port Edwards (at light) and Nekoosa; Waupaca ("from forest floor" or "from oak understory"); Douglas Co., Gordon Nursery)); Quebec (Parke Reserve, Old Chelsea); Virginia (Mountain L.); Wyoming (Teton Pass) (USNM, CNC, SC, AC, HC, BM).

Notes. Males examined, probably belonging to this species, have 20 antennal segments, from California (Bass Lake) and Virginia (Falls Church). Paratypes were mostly collected in August, less frequently in July, September and October and seldom in June.

The variation in the paratypes is considerable; length of 3rd antennal segment 1.3—1.5 times 4th segment; length of 3rd and 4th segments 2.2—2.7 and 1.5—2.0 times their width, respectively; length of ovipositor sheath 0.37—0.45 times fore wing; length of femur, tibia and basitarsus of hind leg 3.9—4.8, 8.0—8.8 and 5.0—6.3 times their width, respectively; specimens from the western part of the continent may have a reddish mesoscutum and mesosternum partially. The size of the wings and, in lesser degree, legs and antennae are related to the size of the specimen, but in this species the size of the ovipositor varies only slightly. This is the reason why in this species large specimens have a relatively short ovipositor sheath as compared to fore wing. The species is characterized by the wide and truncate antennal segments (best observed at 3rd to 6th segments), the nearly always smooth apical area of 1st tergite of metasoma, the length of the ovipositor sheath being about equal to hind tibia or somewhat longer, and the distinct row of setae on the hind basitarsus.

Through the kindness of Dr. Haeselbarth I could examine a paratype of the related Palaearctic *forticornis* ("?Dyrhavn, Koch, 29.9.1880, coll. Schlick"). That species has the 1st discoidal cell wider, propodeal tubercle distinctly below level of dorsal surface of propodeum, face less sculptured, 1st metasomal tergite distinctly reticulate, antenna less moniliform apically, and ovipositor shorter, while the length of ovipositor sheath measures 0.32 times fore wing. Dr. Haeselbarth also considers it to be a distinct species (in litt.: "Dies ist also allem Anschein nach eine andere Art").

Blacus (Blacus) paganus Haliday (Fig. 371—377, 388, 389)

Haliday, 1835, Ent. Mag. 3: 122.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 23.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 124—125, Fig. 53, 117.
Ruthe, 1861, Berl. Ent. Z. 5: 146 (*Blacus brevicornis*).

Description of the Nearctic form, which has the 1st tergite wider and less sculptured (Fig. 373 versus Fig. 389). ♀, length of body ca. 2.8 mm, length of fore wing ca. 2—7 mm, according to Haeselbarth 2.5—3.5 mm.

Head. — Antenna stout, length of 3rd segment 1.1—1.2 times 4th segment; length of 3rd and 4th segments 1.7—1.8 and 1.4—1.6 times their width, respectively, penultimate segments quadrate or somewhat transverse; dorsal length of eye 0.5 times temple; POL : Ø ocellus : OOL : = 6 : 5 : 7 in figured specimen; area in front of occipital carina crenulate; frontal suture present; malar suture absent; frons, clypeus and vertex smooth; face punctato-rugose medially; malar space somewhat shorter than basal width of mandible.

Mesosoma. — Length of mesosoma 1.5 times its height; side of pronotum reticulate except for dorsal fifth; zone behind prepectal carina crenulate; epicnemial suture reticulato-rugose as precoxal suture, the latter rather weakly developed anteriorly and posteriorly (Fig. 371); metapleural flange wide; notauli crenulate anteriorly, shallow medially and rugose posteriorly; mesoscutal lobes punctulate; scutellar suture wide, deep, with five medium-sized carinae; scutellum smooth except for some scarcely visible punctulation, its lateral carina complete; propodeal tubercle medium-sized, compact; propodeum superficially reticulato-rugose (more distinct in Palaearctic form), reticulate posteriorly and laterally.

Wings. — Parastigma large; r 2 almost straight; d 1 : d 2 = 6 : 13 in figured specimen; 1st discoidal cell rather widely truncate anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 3.7—4.1, 7.4—8.2 and 3.9—6.0 times their width, respectively; hind coxa rugose; hind femur almost smooth.

Metasoma. — Length of 1st tergite 1.4—1.5 times (1.7—1.9 times in Palaearctic form) its apical width, superficially reticulate, flattened apically, dorsal carinae distinct in basal fifth; length of ovipositor sheath 0.22—0.24 times fore wing.

Colour. — Brown; basal three antennal segments, palpi, legs (except for middle and hind coxae), tegulae, veins and pterostigma, yellowish.

Specimens examined of Nearctic form: (all ♀) British Columbia (Hixon; Cowichan L.); Alberta (Aspen Beach; Banff, 4700 ft.); Quebec (Cape Rouge; Old Chelsea); Georgia (Rabin Bald, 4200 ft); North Carolina (Highlands, 4100 ft; Wayah Bald, 5300 ft; Looking Glass Rock, 2500 ft) (CNC, AC, SC).

Specimens examined of Palaearctic form: Norway (Selva, nr. Trondheim) and the Netherlands (Waarder (Zuid-Holland); Wijster (Drente)).

Notes. The Nearctic form may show clinal variation; because of the lack of specimens from the northern Nearctic region I cannot yet decide to give this form specific rank.

The Palaearctic form has the 1st metasomal tergite more slender, and distinctly reticulate and convex apically (Fig. 389), while the scutellum is relatively wider (Fig. 388).

This species seems to prefer wet habitats: it was collected in considerable numbers in a small, rather wet *Alnus* forest (Waarder) and near a small creek with *Betula* spec. (Selva).

Blacus (Blacus) rufescens Ruthe

Ruthe, 1861, Berl. ent. Z. 5: 141.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 25.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 147—148, Fig. 90, 118, 120.
Thomson, 1895, Opusc. Ent. 16: 1735 (*Blacus spinifer*).

This rarely collected species, of which the ♂ is characterized by the large parameres, is not uncommon at Waarder (Zuid-Holland), Netherlands.

Blacus (Blacus) interstitialis Ruthe

Ruthe, 1861, Berl. ent. Z. 5: 150.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 19.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 135—136, Fig. 59, 63.
Fisher, 1963, Z. angew. Zool. 50: 206—208, Fig. 9—11 (*Blacus oscinellae*).

Dutch specimens examined from Waarder (Zuid-Holland) and Putten (Gelderland).

Blacus (Blacus) hastatus Haliday

Haliday, 1835, Ent. Mag. 3: 21.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 20.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 137—138, Fig. 57, 58.
Ruthe, 1861, Berl. ent. Z. 5: 142 (*Blacus terebrator*).

Specimens examined from the Netherlands are from Waarder, Meijendel (both Zuid-Holland) and Wijster (Drente).

Blacus (Blacus) instabilis Ruthe

Ruthe, 1861, Berl. ent. Z. 5: 149.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 21.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 153—155, Fig. 77, 84.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 153 (*Blacus petiolatus*).

This species is not known from the Netherlands.

Blacus (Blacus) subquadratus Papp

Papp, 1971, Annls. hist.-nat. Mus. natn. Hung. 13: 307.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 156—157.

Only holotype from Mongolia known.

Blacus (Blacus) tobiae Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 162—163, Fig. 89.

Known from Kasachstan and Turkmenia, USSR.

Blacus (Blacus) leptostigma Ruthe

Ruthe, 1861, Berl. ent. Z. 5: 152.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 21—22.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 161—162, Fig. 122.

According to Haeselbarth (1973a: 162) this species may be an aberrant form of *exilis* or *filicornis*. It is only known from Germany and Ireland.

Blacus (Blacus) filicornis Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 155—156, Fig. 78, 85.

This common species may be expected in the Netherlands. It is not clear whether this species is really distinct from *exilis*. Specimens with typical *filicornis*-antenna but without doubt belonging to *exilis* do occur (see *B. exilis*). The length of the ovipositor sheath may be distinctive: in examined paratype ca. 0.11 times fore wing (ca. 0.20 times in *exilis*).

Blacus (Blacus) pappianus Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 148—149, Fig. 70—71, 91, 115, 119.

Species known from Central and E. Europe.

Blacus (Blacus) procerus Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 149—150, Fig. 72, 82.

Holotype from Kasachstan (USSR) and a ♂ from Mähren (Czechoslovakia).

Blacus (Blacus) nigricornis Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 141—142, Fig. 65, 68, 73.

In the Netherlands wide-spread: I have examined specimens from Meijendel, Leiden, Asperen (all Zuid-Holland), Putten (Gelderland) and Wijster (Drente).

Blacus (Blacus) bovistae Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 145—146, Fig. 69.

Species known from Central Europe.

Blacus (Blacus) errans (Nees)

Nees von Esenbeck, (1811) 1812, Mag. Ges. nat. Fr. Berl. 5: 19 (as *Bracon*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 19.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 139—141, Fig. 61, 67, 74.
Ruthe, 1861, Berl. ent. Z. 5: 155 (*Blacus vagans*).

Rather variable species, in the Netherlands collected at Waarder (Zuid-Holland) only.

Blacus (Blacus) stelfoxi Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 144—145, Fig. 64, 66, 76.

I have seen 3 ♀ of this rare species which I collected at Waarder (Zuid-Holland). As most species mentioned in this paper from the Netherlands, this species is new to the Dutch fauna.

Blacus (Blacus) hostilis Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 143—144, Fig. 62, 75.

Only known from 3 ♀ in the Foerster collection, probably from the surroundings of Aachen.

Blacus (Blacus) modestus Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 132—133, Fig. 49, 54.

Through the kindness of Dr. Haeselbarth I could examine a paratype. The malar suture is absent and the length of the ovipositor sheath measures 0.35 times the length of the fore wing.

Blacus (Blacus) radialis Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 126, Fig .50.

Three specimens were examined from Nepal: "Nepal, 2 mls S.W. Ulleri, 6000—7000 ft, 18.v.1954, J. Quinlen" (BM); "East Nepal Exp., R. L. Coe, B.M. 1962-177", "Taplejung Distr. below Sangu, edge of small mixed wood, c. 6000 (ft), 4.xi.1961" (AC); first label identical, "Damp evergreen forest above Sangu, c. 9200 (ft), 2-26.xi.1961" (BM). Hind tarsus somewhat shorter than hind tibia.

Blacus (Blacus) forticornis Haeselbarth

Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 126—127, Fig. 48.

Very rarely collected, but it may occur in the Netherlands; see note under *caduceus.*

Blacus (Blacus) longipennis (Gravenhorst) (Fig. 386, 387)

Gravenhorst, 1809, Vergl. Übers. Linn. zool. Syst.: 268 (as *Ophion*).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 22.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 130—132, Fig. 47, 52, 56.
Ruthe, 1861, Berl. ent. Z. 5: 156 (*Blacus dubius*).

Specimens examined from Waarder (Zuid-Holland), Vogelenzang (Noord-Holland) and Putten (Gelderland), all in the Netherlands.

Blacus (Blacus) inopinus spec. nov. (Fig. 433—439)

Holotype, ♀, length of body 2.1, length of fore wing 2.0 mm.

Head. — Antenna slender, length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 3.8 and 3.3 times their width, respectively, length of penultimate segments ca. 1.7 times their width; dorsal length of eye 0.9 times temple; POL : Ø ocellus : OOL = 17 : 7 : 20; frontal and malar sutures absent; vertex, frons, clypeus and face smooth; area in front of occipital carina distinctly crenulate; length of malar space ca. 1.2 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulato-rugose, except for dorsal third; zone behind prepectal carina almost smooth; epicnemial suture finely striate; precoxal suture complete, finely punctato-striate; metapleural flange large; notauli deep and crenulate anteriorly, rather shallow and almost smooth posteriorly; mesoscutal lobes moderately convex, slender (Fig. 435); scutellar suture smooth, except for distinctly developed medial carina, deep; scutellum smooth, except for some rugae apically, its lateral carina rather weakly developed, indistinct laterally; propodeal tubercle absent; whole surface of propodeum transversely reticulato-rugose, posterior surface more reticulate.

Wings. — Parastigma small; r 2 straight; 1st discoidal cell sharp anteriorly; subdiscoideus almost straight basally; cu 3 (and 2) wanting; d 1 : d 2 = 1 : 6; metacarp surpassing radial cell (Fig. 439).

Legs. — Length of femur, tibia and basitarsus of hind leg 4.4, 10.0 and 8.0 times their width, respectively; hind coxa and femur smooth.

Metasoma. — Length of 1st tergite 1.7 times its apical width, spiracle distinctly protruding, surface (reticulato-)rugose, dorsal carinae distinct in basal two-fifths; length of ovipositor sheath 0.27 times fore wing, somewhat longer than hind femur.

Colour. — Reddish brown; palpi, antenna basally, mandible, labrum, pronotum, tegulae, pterostigma, metasoma antero-ventrally and legs, more or less yellowish; head (except mouth parts), antenna largely and apical half of metasoma, dark brown.

Holotype in Stam Collection, Den Haag: "No. v. 8360, Stam Coll.", "Zaïre, Lubumbashi (= Elizabethville), 10-11.ii.1972, A. B. Stam, at light".

Blacus (Blacus) chilensis spec. nov. (Fig. 440—446)

Holotype, ♀, length of body 2.9, length of fore wing 2.7 mm.

Head. — Antenna stout, length of 3rd segment 1.4 times 4th segment, length of 3rd and 4th segments 2.8 and 2.0 times their width, respectively, length of penultimate segments ca. 1.2 times their width; dorsal length of eye 0.9 times temple (Fig. 446); POL : Ø ocellus : OOL = 5 : 2 : 2; frontal and malar sutures absent; face smooth, except for some rugae near antennal sockets; clypeus smooth excpt for some weakly developed punctures, apical half flattened; vertex and frons smooth; area in front of occipital carina crenulate; length of malar space 1.6 times basal width of mandible.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulato-rugose; zone behind prepectal carina almost smooth; epicnemial suture finely rugose; precoxal suture complete, finely reticulato-rugose, rather wide; mesoscutal lobes rather convex; notauli completely crenulate, rather narrow anteriorly, distinctly widening apicad (Fig. 443); scutellar suture moderately deep with one rather weakly developed medial carina; scutellum convex and smooth, its lateral carina absent; propodeal tubercle small but distinct; surface of propodeum rugoso-reticulate, almost smooth anteriorly.

Wings. — Parastigma small; r 2 almost straight; cu 3 (and 2) absent; metacarp not surpassing radial cell; d 1 : d 2 = 10 : 11; 1st discoidal cell sharp anteriorly.

Legs. — Length of femur, tibia and basitarsus of hind leg 5.0, 8.4 and 8.3 times their width, respectively; hind femur rather pimply, hind coxa rugose dorso-basally.

Metasoma. — Length of 1st tergite 1.4 times its apical width, rather weakly punctato-rugose, dorsal carinae distinct in basal half; length of ovipositor sheath 0.21 times fore wing.

Colour. — Brownish black; antenna, tegulae, mandible, clypeus largely, pterostigma and metasoma (except for 1st tergite), reddish brown; palpi and legs brownish yellow; antenna and metasoma darkened apicad.

Holotype ♀ in MCZ, Cambridge (USA): "Chile, 190., P' Herbst".

Note. Closely related to *exilis* and it may well have evolved from this widely spread Holarctic species in the W. Neotropical area. Distinguished from its relatives by its punctulate, apically flattened clypeus.

Neoblacus Ashmead, subgenus, stat. nov.
(Fig. 447—453)

Ashmead, 1900, Proc. U.S. natn. Mus. 23: 122.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 116.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 75, 134.

Type-species: *Neoblacus rufipes* Ashmead, 1900 (nec *Blacus rufipes* (Ashmead, (1888) 1889)).

Diagnosis. — Medium-sized; antennal segments of ♀ 17, of ♂ 18 (but apical segment may be partly divided); eye bare; occipital carina complete, distinctly developed; frons and vertex smooth; length of malar space ca. twice basal width of mandible; palpi medium-sized, length of maxillary palpus about equal to height of head; frontal and malar sutures absent; face and clypeus smooth; apical margin of clypeus thin, slightly concave medially; precoxal suture complete, reticulato-rugose; pleural suture narrow, rather shallow and finely crenulate; metapleural flange medium-sized, blunt; notauli only in anterior half distinctly developed and crenulate, rather shallow (but sometimes almost complete); scutellar suture deep, wide with one distinctly developed carina; whole scutellum rugoso-reticulate, apically rounded and sloping towards metanotum, its lateral carina weakly developed, scarcely discernable from lateral rugosity; length of dorsal surface of propodeum about equal to length of posterior surface; propodeum superficially rugose dorsally and reticulate posteriorly, no medial area present; propodeal tubercle distinct, blunt and lowly attached (Fig. 447); cu 1, 2 and 3 absent, with sometimes a few remains near cuqu 1; parastigma small; r 2 slightly bent; subdiscoideus almost straight, slightly bent only (Fig. 450); hind coxa with some rugae and a carina dorsally; all claws simple; metacarp not or only slightly surpassing radial cell; length of hind femur 4.0 times its width; ovipositor slightly but evenly bent ventrad; length of ovipositor sheath 0.22—0.25 times fore wing; hypopygium medium-sized.

Distribution. — Holarctic: one species.

Notes. This subgenus is closely allied to subgenus *Blacus* and differs mainly by the absence of cu 1 (but some remnants may be present) and lowly attached propodeal tubercle (Fig. 447).

Important apomorphous characters are: 1 — margin of clypeus slightly concave medially; 2 — notauli reduced; 3 — scutellum rugoso-reticulate; 4 — medial area of propodeum absent; 5 — propodeal tubercle present, lowly attached; 6 — cu 1, 2 and 3 absent; 7 — ovipositor slightly bent ventrad, short.

For a very long time the interpretation of *Neoblacus* has been problematic because the type of the type-species was never properly described and is now lost. A repeated search by Dr. P. M. Marsh and Dr. W. R. M. Mason was only partly successful; the pin with the labels of Ashmead ("Mt. Wash'n", "*Neoblacus rufipes* Ashm, ♀") was found. Unfortunately the specimen itself is missing except for a front leg, which may well be identical with the front leg of *koenigi.* The situation is further complicated by the repeated convergent reduction of cu 1 in several groups, e.g. in the Blacini and in the Euphorinae. To clear the situation the figured specimen from Sudbury, Ontario (CNC) is herewith selected as neotype of *Neoblacus rufipes* (Ashmead, 1900) (nec Ashmead, 1889), which is conspecific with *koenigi* Fischer, 1966.

Blacus (Neoblacus) koenigi Fischer (Fig. 447—453)

Fischer, 1966, Z. angew. Ent. 58: 333—335, Fig. 13.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 21.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 133—134, Fig. 60.
Ashmead, 1900, Proc. U.S. natn. Mus 23: 122 (*Neoblacus rufipes*). Syn. nov. (nec *Blacus rufipes* (Ashmead, (1888) 1889), Proc. U.S. natn. Mus. 11: 626).

Neotype of *Neoblacus rufipes* herewith selected and described below.

Neotype, ♀, length of body 2.4, length of fore wing 1.8 mm.

Head. — Antennal segments 17 (also in 11 ♀ examined), length of 3rd segment 1.3 times 4th segment; length of 3rd and 4th segments 4.3 and 3.3 times their width, respectively, length of penultimate segments 1.8—2.0 times their width; dorsal length of eye equal to temple (Fig. 448); POL : Ø ocellus : OOL = 6 : 2 : 5; area in front of occipital carina finely crenulate; mandible somewhat twisted medially.

Mesosoma. — Length of mesosoma 1.4 times its height; side of pronotum reticulato-rugose, except for dorsal patch (Fig. 447); side of middle lobe of mesoscutum rugoso-reticulate; zone behind prepectal carina almost smooth; finely crenulate; epicnemial suture smooth; metapleura rugoso-reticulate; mesoscutal lobes flattened dorsad.

Wings. — Nervulus indistinct, short; nervellus medium-sized, after middle of mediella; d 1 : d 2 = 1 : 4.

Legs. — Length of femur, tibia and basitarsus of hind leg 4.0, 9.5 and 9.5 times their width, respectively.

Metasoma. — Length of 1st tergite 1.8 times its apical width (as in examined paratype of *koenigi*), surface finely rugoso-reticulate (in other specimens basally often superficial and shiny), dorsal carinae rather weakly developed, distinct in basal half (Fig. 453); 2nd tergite finely rugose medio-basally, remainder of metasoma smooth, except for some superficial punctures on apices of 3rd to 5th tergites; length of ovipositor sheath 0.25 times fore wing.

Colour. — Reddish brown; palpi, mandible, base of antenna, tegulae, legs, metasoma antero-ventrally and 3rd and 4th metasomal tergites partly, yellowish; pterostigma brown; hind femur and tibia in other specimens often somewhat brownish yellow.

Neotype ♀ (of *rufipes*) in CNC, Ottawa: "Sudbury Ont. 1890", "109".

Other specimens examined: "e.l. 11.5.1965, Bez. Baden, N.O. leg. C. Holzschuh", "ex *Acer platanoides* L.", "bei *Scolytus königi* Sa.". Legs of this paratype (of *B. koenigi*) brownish, length of ovipositor sheath 0.22 times fore wing.

Additional specimens were examined from Maryland (Beltsville (in mushroom houses, 2 ♂, identified by Muesebeck as *Neoblacus rufipes* Ashm.) and Plummers (ex (the fungus) *Stemonitis fusca*)); California (Humboldt Co., ex cones of *Pseudotsuga menziesii*); Massachusetts (Mt. Toby); New Hampshire (Durhan); Quebec (La Trappe); Wisconsin (16 ♀ and 29 ♂ : Wood Co., Nekoosa, R. D. Shenefelt, Bd. (?), frequently collected with light trap by W. W. Barrett); mainly collected in August and first half of October, less frequently towards the end of July (SC, AC, HC, USNM).

Apoblacus gen. nov.
(Fig. 469—476)

Etymology: the prefix "apo" (Greek for separated, or derived from) is added to *Blacus*, because it is a derived group, related to *Blacus*. Gender, masculine.

Type-species: *Apoblacus centistoides* spec. nov.

Diagnosis. — Dorsal aspect of head quadrate (Fig. 471); antenna comparatively wide (Fig. 469); eye small, bare; occipital carina and epistomal suture complete; frons and vertex smooth; frontal and malar sutures absent; palpi short, stout; occipital flange distinct; precoxal and epicnemial sutures completely sculptured; pleural suture rather wide; metapleural flange large and blunt; notauli absent, except for some remnants posteriorly; lateral carina of scutellum absent but some lateral striae present; dorsal surface of propodeum longer than its posterior surface, without distinctly developed carinae (Fig. 476); propodeal tubercles present; metacarp ending near apex of the radial cell (Fig. 475); 1st brachial cell open apically and posteriorly (at least in its apical half); nervellus indistinct, short; submedial cell strongly widened apicad; aqu 1 + 2 and aqu′ absent; fore and middle claws of ♀ with medium-sized, dark brown bristles (Fig. 473), hind claw simple; length of hind femur 3.5 times its width; length of 1st metasomal tergite 1.7 times its apical width; glymma wide; laterope rather shallow; dorsope medium-sized; 2nd tergite smooth; 2nd-5th tergites completely enclosing metasoma, its sternites invisible and ventral side of metasoma equally sclerotized as its dorsal side; ovipositor straight, rather wide basally (Fig. 469), length of its sheath 0.07 times fore wing; hypopygium invisible.

Distribution. — Neotropical : one species.

Apoblacus centistoides spec. nov. (Fig. 469—476)

Holotype, ♀, length of body 1.9, length of fore wing 1.8 mm.

Head. — Antennal segments incomplete, 12 segments present, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 1.7 and 1.3 times their width, respectively; maxillary palpus distinctly shorter than height of head; dorsal length of eye 0.5 times temple (Fig. 471); temple and vertex smooth; POL : Ø ocellus : OOL = 12 : 5 : 13; frons almost flat; occipital carina distinctly developed, area in front of it crenulate; face and clypeus smooth; anterior tentorial pits small and deep (Fig. 470); apical margin of clypeus straight, thin; length of malar space about 1.7 times the basal width of mandible.

Mesosoma. — Length of mesosoma 1.6 times its height; side of pronotum completely rugoso-punctate; zone behind prepectal carina crenulate; epicnemial and precoxal sutures completely transversely striate (Fig. 469); pleural suture distinctly crenulate; episternal scrobe large; metapleura punctato-rugose; mesoscutum convex, smooth, without notauli but with some remnants in front of the scutellar suture (Fig. 474); scutellar suture deep, with five distinctly developed longitudinal carinae; scutellum almost smooth, moderately convex; propodeal tubercle rather small, but distinctly developed; dorsal surafce of propodeum coarsely rugoso-punctate, almost smooth anteriorly, its posterior surface coarsely transversely punctato-rugose.

Wings. — First discoidal cell shortly petiolate; r 2 straight; d 1 : d 2 = 10 : 14; parastigma small, indistinct; wings comparatively narrow (Fig. 475); sm 2 almost completely absent.

Legs. — Hind coxa generally rugose; femur and tibia of hind leg smooth; tarsal claws slender; length of femur, tibia and basitarsus of hind leg 3.5, 8.0 and 7.0 times its width, respectively.

Metasoma. — Length of 1st tergite 1.7 times its apical width, its surface superficially and longitudinally striate (Fig. 476), spiracles not protruding, its dorsal carinae distinct in basal third; length of ovipositor sheath 0.07 times fore wing; setae of 2nd and following tergites in dorsal rows.

Colour. — Brownish black; legs and mandibles, dark reddish brown; palpi, tegulae and pterostigma, brown; wings infuscated; r 2 and cu 3 discoloured.

Holotype ♀ in CNC, Ottawa: "Chile, 12.x.1951, L. E. Peña, Linares", "Rio Ancoa", "Blacini, new genus, det. W. R. M. Mason 73".

Notes. I have examined an additional male of a related species from Chile ("Rio Gol-Gol, Osorno, 8-11.ii.1951, L. E. Peña", CNC) with mesoscutum reddish, basal half of sm 2 present; r 2 coloured; 1st discoidal cell truncate; propodeum with weak longitudinal carina; clypeus striate; legs and 1st tergite more slender and posterior half of scutellum coarsely punctate.

This is the group with the largest number of apomorphous characters included in the

Blacini. The apomorphous characters important in the Blacini are : 1 — sm 2 absent, at least apically; 2 — aqu 1 + 2 absent; 3 — sm strongly widened apically; 4 — wings relatively narrow; 5 — at least basal 0.8 of notauli completely absent; 6 — dorsal surface of propodeum much longer than its posterior surface and without transverse carinae; 7 — propodeal tubercles present; 8 — 2nd-5th tergites enclose metasoma completely; 9 — ovipositor very short and comparatively wide basally; 10 — eyes small; 11 — metacarp ends near apex of radial cell; 12 — palpi short; 13 — 2nd metasomal tergite smooth; 14 — fore and middle claws with brownish bristles; 15 — antenna stout; 16 — r 1 leaves pterostigma near its distal third; 17 — malar suture absent.

The plesiomorphous characters are : 1 — occipital carina and precoxal suture complete; 2 — metapleural flange large; 3 — lateral carina of scutellum indistinct; 4 — scutellar suture with carinae; 5 — dorsal aspect of head quadrate.

Artocrus gen. nov.
(Fig. 292—299)

Etymology: from "artus" (Latin for narrow) and "crus" (Latin for leg) because of its slender legs. Gender, neuter.

Type-species: *Artocrus spinarius* spec. nov.

Diagnosis. — Number of antennal segments rather large; palpi slender, long; eye bare (except for some short setae); occipital carina complete, distinctly developed; frons and vertex smooth; malar suture absent; face smooth; clypeus wide, smooth, its margin straight medially, its edge somewhat thickened and upcurved; precoxal suture distinct, crenulate as pleural suture; metapleural flange large; notauli complete; scutellar suture deep, with one longitudinal carina; scutellum smooth, with large spine apically (Fig. 293), spine concave apico-anteriorly (Fig. 298), its lateral carina present in basal half only; 1st discoidal cell petiolate; parastigma medium-sized (Fig. 295); length of hind femur 8.0 times its width; hind tibia constricted basad (Fig. 297); fore and middle claws of ♀ with large, subbasal bristles and a lamelliform tooth basally (Fig. 296); hind claw simple, medium-sized; propodeum with medial and both lateral carinae (Fig. 292), but no distinct posterior areas; dorsal surface of propodeum distinctly longer than posterior surface (Fig. 293); propodeal tubercle absent; 1st metasomal tergite slender, convex, dorsope large (Fig. 292); 2nd tergite smooth; ovipositor straight; hypopygium rather large (Fig. 293).

Distribution. — Neotropical: one species.

Notes. Important apomorphous characters are: 1 — large apical spine of scutellum; 2 — lateral carina of scutellum present in anterior half; 3 — hind tibia strongly constricted basally; 4 — fore and middle claws of ♀ with blackish bristles and teeth; 5 — transverse carinae of propodeum absent; 6 — dorsal surface of propodeum longer than its posterior surface; 7 — 2nd tergite smooth; 8 — hypopygium rather large; 9 — ovipositor short.

Artocrus spinarius spec. nov. (Fig. 292—299)

Holotype, ♀, length of body 3.9, length of fore wing 3.8 mm.

Head. — Antennal segments 27, length of 3rd segment 1.3 times 4th segment, length of 3rd and 4th segments 7.2 and 5.4 times their width, respectively, penultimate segments somewhat longer than their width (Fig. 293); length of maxillary palpus ca. 1.5 times height of head; dorsal length of eye 1.1 times length of temple (Fig. 294); frontal suture short (Fig. 299); POL : Ø ocellus : OOL = 11 : 7 : 16; frons rather flat; area in front of occipital carina crenulate; face slightly convex, with small tubercle medially (Fig. 299); length of malar space about equal to twice basal width of mandible; malar suture absent, but with a shallow depression near eye (Fig. 299).

Mesosoma. — Whole mesosoma setose except for surroundings of speculum; length of mesosoma 1.4 times its height (without spine: 1.5 times); side of pronotum nearly smooth except for some rugae (Fig. 293); zone behind prepectal carina almost smooth; epicnemial suture smooth; precoxal suture deeply impressed, absent anteriorly, crenulae widely spaced (Fig. 293); episternal scrobe small; notauli deep and distinctly crenulate; mesoscutal lobes distinctly convex, smooth; scutellum rather convex; side of scutellum smooth, except for some indistinct carinae; propodeum smooth, except for distinct medial and both lateral carinae and some superficial rugosity (Fig. 292).

Wings. — r 2 straight; d 1 : d 2 = 9 : 27; infuscate except for hyaline area near and below parastigma.

Legs. — Hind leg almost smooth; length of femur, tibia and basitarsus of hind leg 8.0, 10.2 and 11.7 times their width, respectively.

Metasoma. — Length of 1st tergite 2.2 times its apical width, convex anteriorly, shiny, smooth except for some superficial rugosity, dorsal carinae confluent, distinct in basal third, spiracle distinctly protruding (Fig. 292); length of ovipositor sheath 0.18 times fore wing.

Colour. — Dark brown; tarsi, trochanters, pedicellus and annellus partially, parastigma, mandible and basal sternites of metasoma, more yellowish brown.

Holotype ♀ in CNC, Ottawa: "Nova Teutonia, 27°11'S, 52°23'W, Brazil, 300-500 m, 3.ix.1948, Fritz Plaumann". Paratypes: All topotypic, 75 ♀, antennal segments 27 (60 specimens), 26 (5), one specimen has left 26 and right 27, another left 27 and right 28. Most specimens captured in second half of May and first half of June (BM, AC, HC, CNC). Further 12 ♂, antennal segments 28 (6) or 27 (5). Mostly captured in 1st half of May (BM, AC).

EXCLUDED SPECIES
(types examined)

cremastobombyciae Fullaway, 1956, = *Mirax cremastobombyciae* (Fullaway, 1956) comb. nov. (Microgasterinae, Miracini) (Fig. 454—460)

Fullaway, 1956, Proc. Hawaiian Ent. Soc. 16 (1): 40.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.

Holotype, ♀, length of body 1.9, length of fore wing 1.8 mm.

Head. — Antennal segments 14, length of 3rd segment 1.2 times 4th segment, length of 3rd and 4th segments 5.3 and 4.3 times their width, respectively, length of penultimate segments 2.7—2.9 times their width; length of palpi ca. 0.7 times height of head; eye bare; dorsal length of eye 1.8 times temple; temple with fine micro-sculpture, shallowly rugose behind; POL : Ø ocellus : OOL = 5 : 3 : 7; frontal suture absent; frons and vertex finely coriaceous; vertex concave posteriorly (Fig. 459); occipital carina absent but replaced laterally by incomplete rugae, area in front of them rugose; face finely coriaceous, dull, slightly convex; tentorial antennal pits small and rather shallow; clypeus moderately convex, its apical margin shiny, almost straight, truncate and somewhat convex (Fig. 458); malar flange indistinct; malar suture distinct; length of malar space somewhat less than basal width of mandible.

Mesosoma. — Length of mesosoma 1.3 times its height; side of pronotum smooth except for fine micro-sculpture; side of middle lobe of mesoscutum superficially rugose; pronotum dorsally almost smooth, collar-shaped; prepectal carina absent; epicnemial suture smooth, except for micro-sculpture; precoxal suture shallow, narrow, smooth; episternal scrobe absent; metapleural flange absent but with ring-shaped elevation (Fig. 454); metapleura smooth; notauli present in basal half only, widely crenulate (Fig. 460), completely absent posteriorly; mesoscutal lobes flattened, especially posteriorly, finely coriaceous; scutellar suture wide, deep, with four distinct carinae; scutellum finely coriaceous, slightly convex, its lateral carina absent; side of scutellum almost smooth; propodeal tubercle absent; dorsal surface of propodeum transversely carinate (Fig. 456), posterior surface not separated from dorsal surface, sloping, medial and both lateral carinae lamelliform (Fig. 456); propodeal spiracle small, almost flat.

Wings. — Parastigma rather large, metacarp largely reduced (Fig. 455); 1st discoidal cell sharp anteriorly; r 2 effaced, except for basal part, equal to cu 2, together with cuqu 1 from pterostigma; nervulus rather long, inclivous; nervellus medium-sized, reclivous, vannal lobe present, intercubitella and interradiella absent; greatest width of hind wing submedially (Fig. 455).

Legs. — Length of femur, tibia and basitarsus of hind leg 3.2, 9.4 and 5.0 times their width, respectively; hind coxa and femur almost smooth; all claws simple, small.

Metasoma. — Length of 1st tergite ca. 7.4 times its apical width and ca. 4.1 its maximum width, completely flat, medio-apically somewhat depressed, spiracle laterally in weakly sclerotized pleuron, flat, dorsal carinae absent, surface smooth, laterope and dorsope absent; 2nd tergite with T-shaped, sclerotized area, its lateral parts membranous, with irregular surface through drying, otherwise metasoma smooth; ovipositor straight; ovipositor sheath wide basally (Fig. 454), its length 0.14 times fore wing; hypopygium medium-sized, blunt apically.

Colour. — Brownish yellow; metasoma apically, pterostigma, costa, metacarp and stemmaticum, more or less brown.

Holotype ♀ in BPBM, Honolulu: "Honolulu, Oahu, 1955", "*Cremastobombycia lantanella*", "Holotype", "Type *Blacus cremastobombyciae*", "*Blacus cremastobombyciae* m. Det. D. T. Fullaway". No. of box: 5564.

Notes. Bred from *Cremastobombycia lantanella* Busck (Lepidoptera, Tineidae).

The lateral position of the spiracles of the 1st metasomal tergite, the shape of 1st and 2nd tergites, the position and reduction of the radius, the vannal lobe and the 14-segmented antenna indicate that this species belongs to the Microgasterinae, tribe Miracini, and is (without doubt) congeneric with *Mirax* Haliday, 1833.

longicaudus Provancher, 1886, = *Eubazus* (*Calyptus*) *longicaudus* (Provancher, 1886) nec Ratzeburg, 1844, comb. nov.; = *E.* (*C.*) *provancheri* nom. nov.

Provancher, 1886, Addit. Corr. Fauna Ent. Canada Hym.: 133, Fig.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 22.

Closely related to the Palaearctic *flavipes* (Haliday); figures and redescription of holotype will be published elsewhere.

natalensis Brues, 1926, = *Eubazus* (*Calyptus*) *natalensis* (Brues, 1926) comb. nov.

Brues, 1926, Proc. Am. Acad. Arts Sci. 6 (8): 277.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 23.

See note under *longicaudus.*

pulcher Szépligeti, 1905, = *Orgilus pulcher* (Szépligeti, 1905) comb. nov.

Szépligeti, 1905, Annls. hist.-nat. Mus. natn. Hung. 3: 53.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 23.

Hereby referred to the Orgilinae; the illustrated redescription of the holotype will be published elsewhere.

rubriceps Ashmead, 1894, transferred to Orgilinae.

Ashmead, 1894, J. Linn. Soc. 25: 131.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 23.

Belongs to a probably new genus near *Charmon* Haliday, 1833 (= *Cyclocormus* Cameron, 1911, syn. nov.), which will be treated in the near future.

SPECIES INQUIRENDAE (types not available)

Blacus barynoti (Boudier)

Boudier, 1834, Annls. Soc. ent. Fr. 3: 333, Fig. (in *Bracon*).
Shenefelt, 1969, Hym. Cat. (nov. ed) 4 (1): 17 (as syn. of *pallipes* Haliday).
Haeselbarth, 1971, Opuscula zool., München 112: 1—2.

The type is a ♂, probably of *Pygostolus sticticus* (F.).

Blacus brachialis Rondani

Rondani, 1877, Boll. Soc. ent. ital. 9: 167.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 79.

Blacus cerealis Curtis

Curtis, 1860, Farm Insects: 294.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 21 (as syn. of *humilis* (Nees)).
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 79.

Possibly a synonym of *ambulans* Haliday, 1835; ♂ holotype in Curtis Collection at Melbourne.

Blacus chinensis Watanabe

Watanabe, 1950, Mushi 21: 25.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 18.

Blacus florus Goureau

Goureau, 1851, Annls. Soc. ent. Fr. (2) 9: 135—137, Fig. (II) 5—7.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 20.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 79.

Probably a junior synonym of *Blacus* (*Ganychorus*) *pallipes* Haliday.

Blacus fuscipes Goureau

Goureau, (1861) 1862, Bull. Soc. Sci. hist. nat. Yonne 15: 111—112.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 20.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 79.

It might be possible to identify this species by rearing the parasites of the host *Scolytus rugulosus* Ratz. Judging from the short description, it may belong to *Eubazus* Nees, subgenus *Brachistes*.

Blacus humillimus Dalla Torre (= *humilis* Spinola, 1851, nec Nees, 1812)

Spinola, 1851, in: Gay, Hist. fisica Polit. Chile 6: 532.
Dalla Torre, 1898, Cat. Hym. 4: 93.
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 21.

Unfortunately there is no specimen under *humilis* in the Spinola Collection at Torino, which fits the original description. The closed brachial cell and subsessile metasoma, oval, as stated in the description, make it almost certain that the type is a ♂ of *Eubazus* Nees (subgenus *Brachistes*).

Blacus wesmaeli Ruthe

Ruthe, 1861, Berl. ent. Z. 5: 147 (as *humilis* sensu Wesmael, p.p.).
Shenefelt, 1969, Hym. Cat. (nov. ed.) 4 (1): 26.
Haeselbarth, 1973a, Veröff. zool. St.-Samml., Münch. 16: 79.

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LITERATURE

Achterberg, C. van, 1974. The features of the petiolar segment in some Braconidae (Hym.). — Ent. Ber., Amst. 34: 213—214, 4 photogr.

Alford, D. V., 1975. Bumblebees, 1—352, Fig. 1—210, 27 maps, 2 tables.

Čapek, M., 1970. A new classification of the Braconidae (Hym.) based on the cephalic structures of the final instar larva and biological evidence. — Can. Ent. 102 (7): 846—875, Fig. 1—58.

————, 1973. Key to the final instar larvae of the Braconidae (Hymenoptera). — Acta Inst. forest. zvol.: 259—268, 1 Fig.

Eady, R. D., 1969. A new diagnostic character in *Aphidius* (Hym., Braconidae) of special significance in species on pea aphid. — Proc. R. ent. Soc. Lond. (B) 38 (11—12): 165—173, Fig. 1—21.

Fischer, M., 1970. Die *Meteorus*-Arten des Burgenlandes. — Wiss. Arbeiten Bgld. 44: 254—300, Fig. 1—12.

————, 1972. Opiinae. In: Das Tierreich, 91: i—xii, 1—620, Fig. 1—463.

Graham, M. W. R. de V., 1969. The Pteromalidae of North-Western Europe (Hym., Chalcidoidea). — Bull. Brit. Mus. nat. Hist., Entomology, Suppl. 16: 1—908, Fig. 1—686.

Granger, C., 1949. Braconides de Madagascar. — Mem. Inst. scient. Madagascar, Sér. A: 1—428, Fig. 1—426.

Griffiths, G. C. D., 1964. The Alysiinae (Hym., Braconidae) parasites of the Agromyzidae (Dipt.). 1. General questions of taxonomy, biology and evolution. — Beitr. Ent. 14: 823—914, Fig. 1—38, 2 graphs.

Haeselbarth, E., 1971. Notizen zur Gattung *Pygostolus* Haliday (Hym., Braconidae). — Opuscula zool., München 112: 1—8, Fig. 1—4.

————, 1973a. Die *Blacus*-Arten Europas und Zentral-Asiens (Hym., Braconidae). — Veröff. zool. St.-Samml., Münch. 16: 69—170, Fig. 1—123.

————, 1973b. Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei, no. 333. Braconidae IV (Hym.). — Folia ent. Hung. (series nova) 26 (Suppl.): 75—81, Fig. 1.

————, 1974. Zehn neue *Blacus*-Arten aus Südafrika (Hym., Braconidae). — Mitt. Münch. ent. Ges. 64: 62—80, Fig. 1—4.

Hedqvist, K-J., 1974. A new species of *Blacus* Nees collected in nests of *Bombus lapponicus* F. in North Sweden (Hymn., Ichneumonoidea, Braconidae). — Ent. Tidskr. 95 (3—4): 184—185, Fig. 1A—D.

Hennig, W., 1966. Phylogenetic systematics, 1—263, Fig. 1—69. — University of Illinois Press, Urbana.

Marsh, P. M., 1963. A key to the Nearctic subfamilies of the family Braconidae (Hym.). — Ann. ent. Soc. Am. 56: 522—527, Fig. 1—29.

————, 1971. Keys to the Nearctic genera of the families Braconidae, Aphidiidae and Hybrizontidae (Hym.). — Ann. ent. Soc. Am. 64: 841—850, Fig. 1—11.

Michener, C. D., 1944. Comparative external morphology, phylogeny, and a classification of the bees (Hym.). — Bull. Am. Mus. nat. Hist. 82: 151—326, Fig. 1—246.

Muesebeck, C. F. W., 1951. Braconidae. In: C. F. W. Muesebeck, K. V. Krombein & H. K. Townes. Hymenoptera of America north of Mexico. Synoptic Catalog. — Agriculture Monograph 2: 90—184. Washington.

Nixon, G. E. J., 1938. Notes on the taxonomy and synonymy of *Zele* Curtis and *Macrocentrus* Curtis (Hym., Braconidae). — Bull. ent. Res. 29: 415—424, Fig. 1—2.

————, 1942. A revision of the Spathiinae of the Old World (Hym., Braconidae). — Trans. R. ent. Soc. Lond. 93 (2): 173—456, Fig. 1—283, 1 plate.

————, 1943. New braconid parasites of Australian wood-boring beetles with notes on the subfamily Hecabolinae (Hym., Braconidae). — Bull. ent. Res. 34 (4): 257—267, Fig. 1—21.

Papp, J., 1965. A monograph of the genus *Aridelus* Marsh (Hym., Braconidae, Euphorinae). — Acta zool. Hung. 11: 181—201, Fig. 1—20.

Richards, O. W., 1956. Hymenoptera. Introduction and key to families. — Handbk. Ident. Brit. Insects 6 (1): 1—94, 127 + 22 figs.

Shenefelt, R. D., 1969. Hymenopterorum Catalogus (nov. ed.). Part 4. Braconidae 1: 1—176. — Junk, 's-Gravenhage.

Snellen van Vollenhoven, S. C., 1873. Naamlijst van Nederlandsche Hymenoptera, Fam. VI. Braconidae. — Tijdschr. Ent. 16: 185—197.

————, 1876. Bijvoegsel tot de naamlijst van Nederlandsche Hymenoptera, Fam. VI. Braconidae. — Tijdschr. Ent. 19: 240—247.

Stary, P., 1966. Aphid parasites of Czechoslovakia. A review of the Czechoslovak Aphidiidae (Hym.): 1—242, Fig. 1—112, 49 photogr. — Junk, 's-Gravenhage.

Tobias, V. I., 1965. Rodovye gruppitovki i evolyutsiya parasiticheskikh pereponchatokrylykh podsem. Euphorinae (Hymenoptera, Braconidae) I. — Ent. Obozr. 44: 841—865, Fig. 1—61.

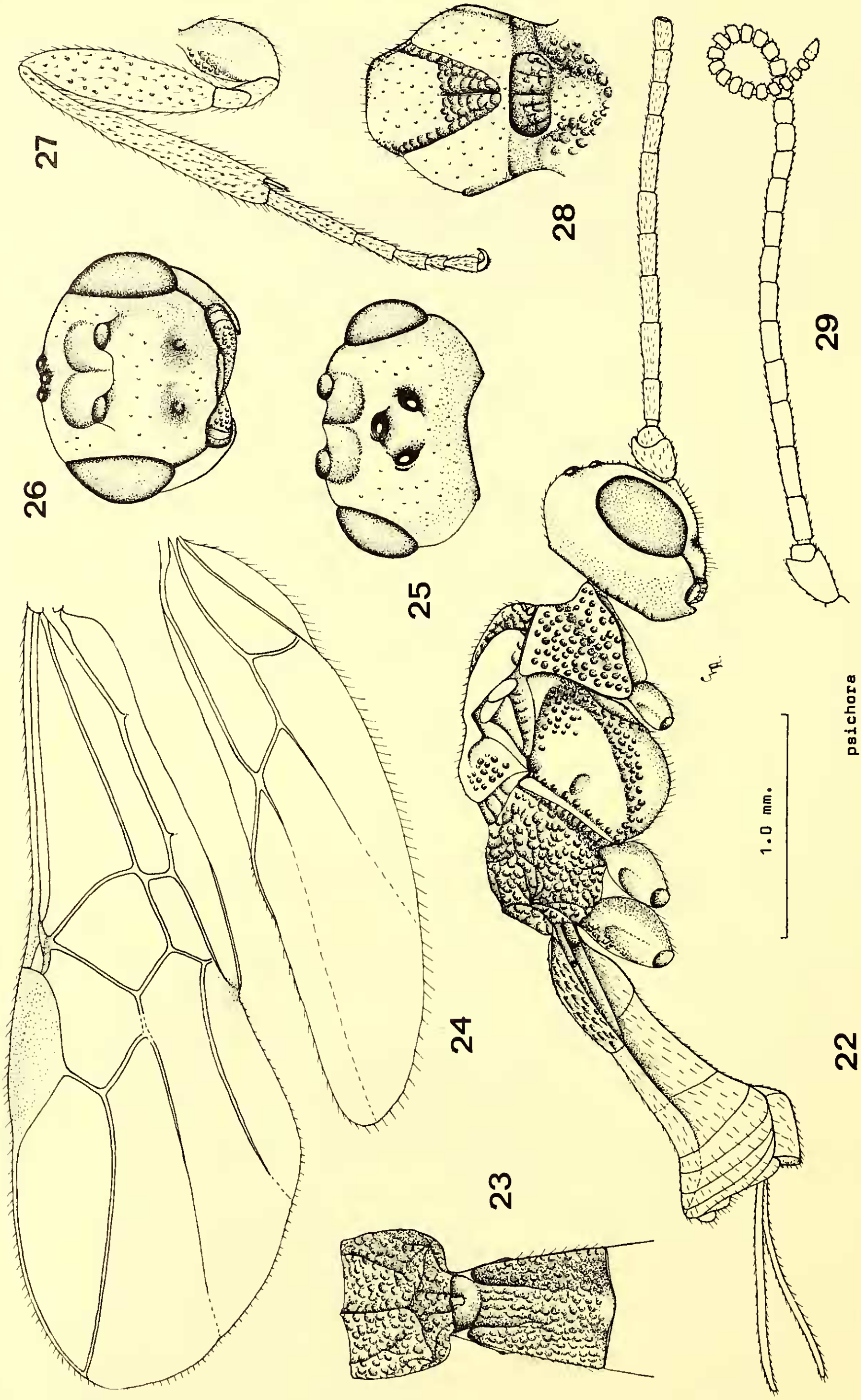

Fig. 22—29, *Blacozona psichora* spec. nov.; 22—25, 28, holotype; 26, 27, 29, paratype. 22, habitus, lateral aspect; 23, propodeum and 1st tergite, dorsal aspect; 24, wings; 25, head, dorsal aspect; 26, head, frontal aspect; 27, hind leg, lateral aspect; 28, mesonotum, dorsal aspect; 29, antenna, lateral aspect. 22, 24, 27, 29: scale-line; 23, 25, 26, 28: 1.2 × scale-line

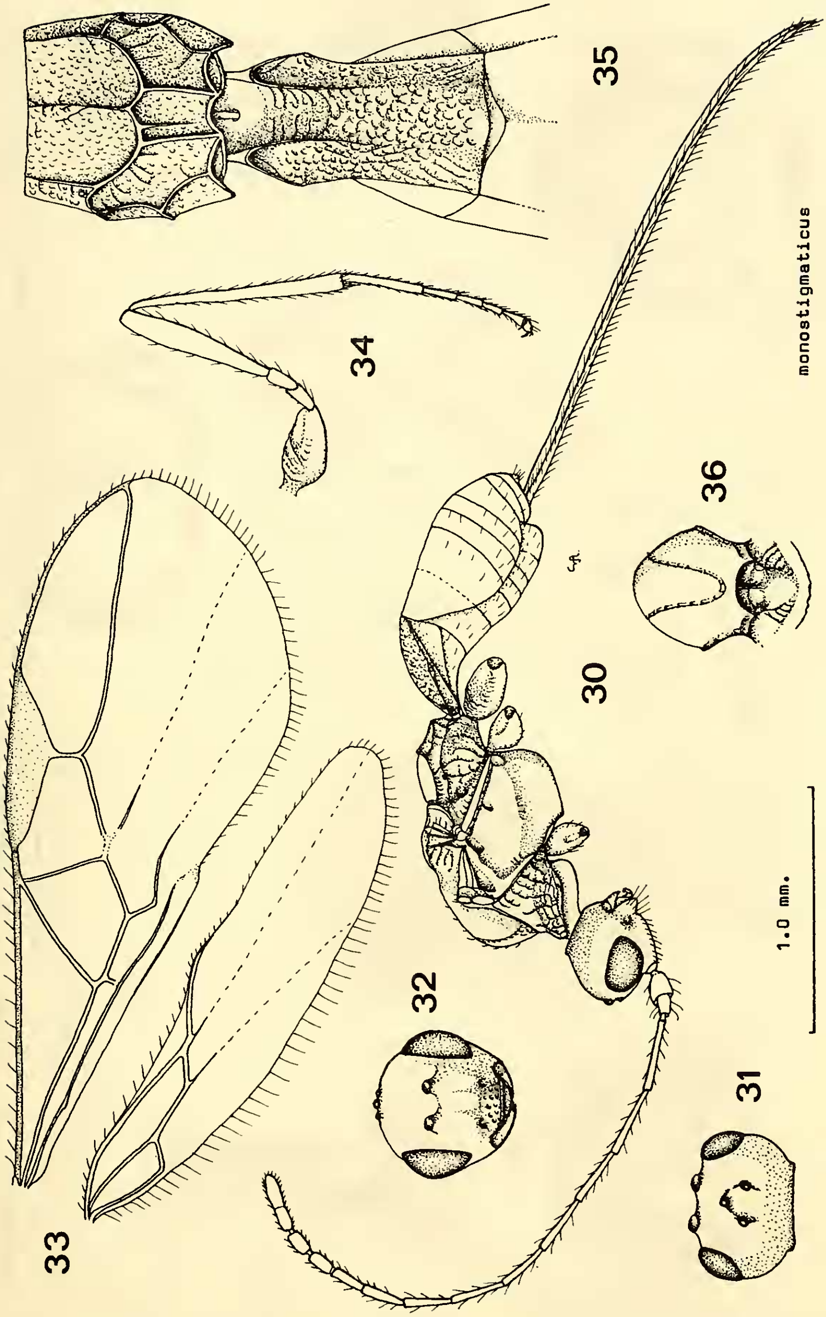

Fig. 30—36, *Blacus* (*Mesoxiphium*) *monostigmaticus* spec. nov., holotype. 30, habitus, lateral aspect; 31, head, dorsal aspect; 32, head, frontal aspect; 33, wings; 34, hind leg, lateral aspect; 35, propodeum and 1st tergite, dorsal aspect; 36, mesontoum, dorsal aspect. 30, 33, 34: scale-line; 31, 32, 36: 1.2 × scale-line; 35: 2.5 × scale-line

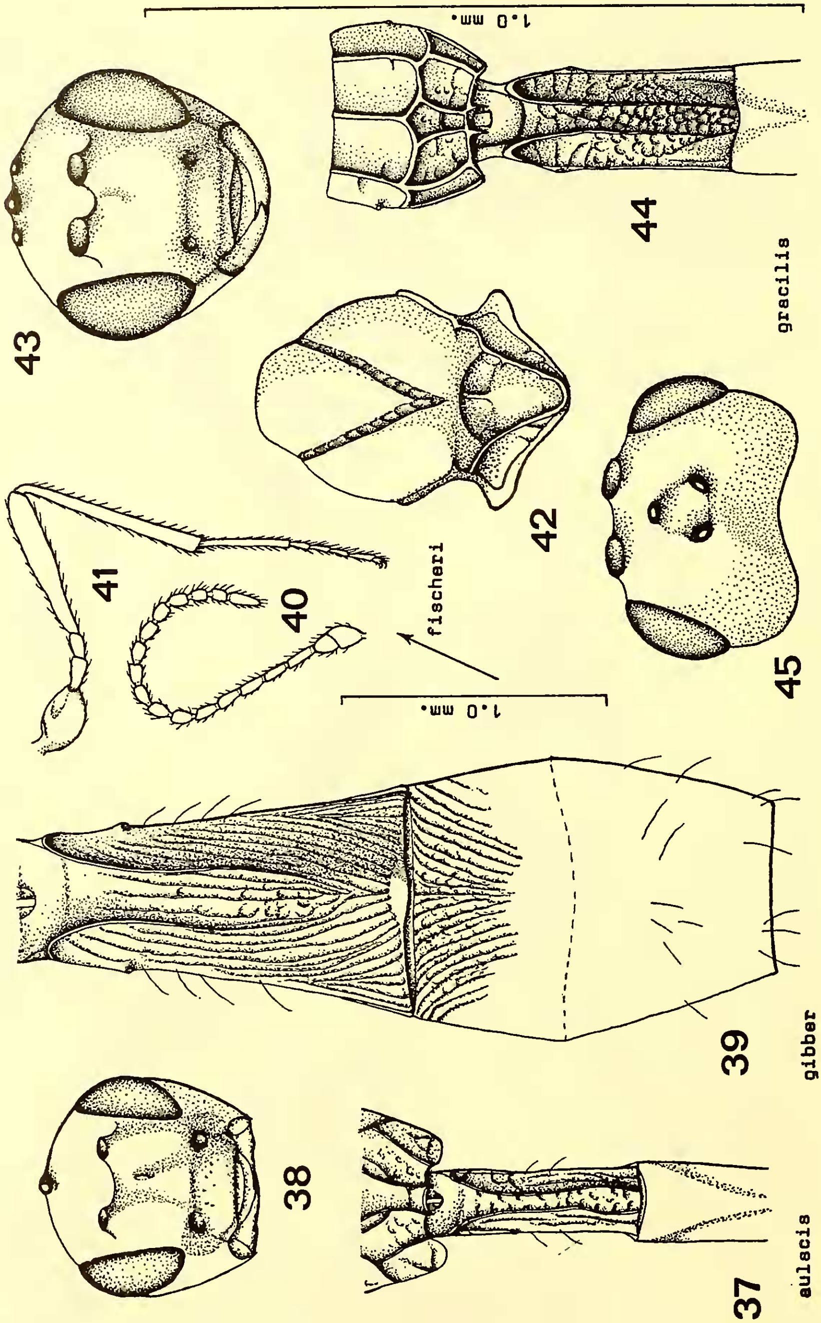

Fig. 37—45; 37, 38, *Blacus* (*Leioblacus*) *aulacis* spec. nov., holotype. 37, propodeum and 1st tergite, dorsal aspect; 38, head, frontal aspect. 39, *Blacus* (*Tarpheion*) *gibber* Haeselbarth, paratype, 1st-3rd tergites, dorsal aspect. 40, 41, *Blacus* (*Leioblacus*) *fischeri* Haeselbarth, holotype; 40, antenna, lateral aspect; 41, hind leg, lateral aspect. 42—45, *Blacus* (*Ischnotron*) *gracilis* Haeselbarth, paratype; 42, mesonotum, dorsal aspect; 43, head, frontal aspect; 44, propodeum and 1st tergite, dorsal aspect; 45, head, dorsal aspect. 38, 39, 42—45: long scale-line; 40,41: short scale line

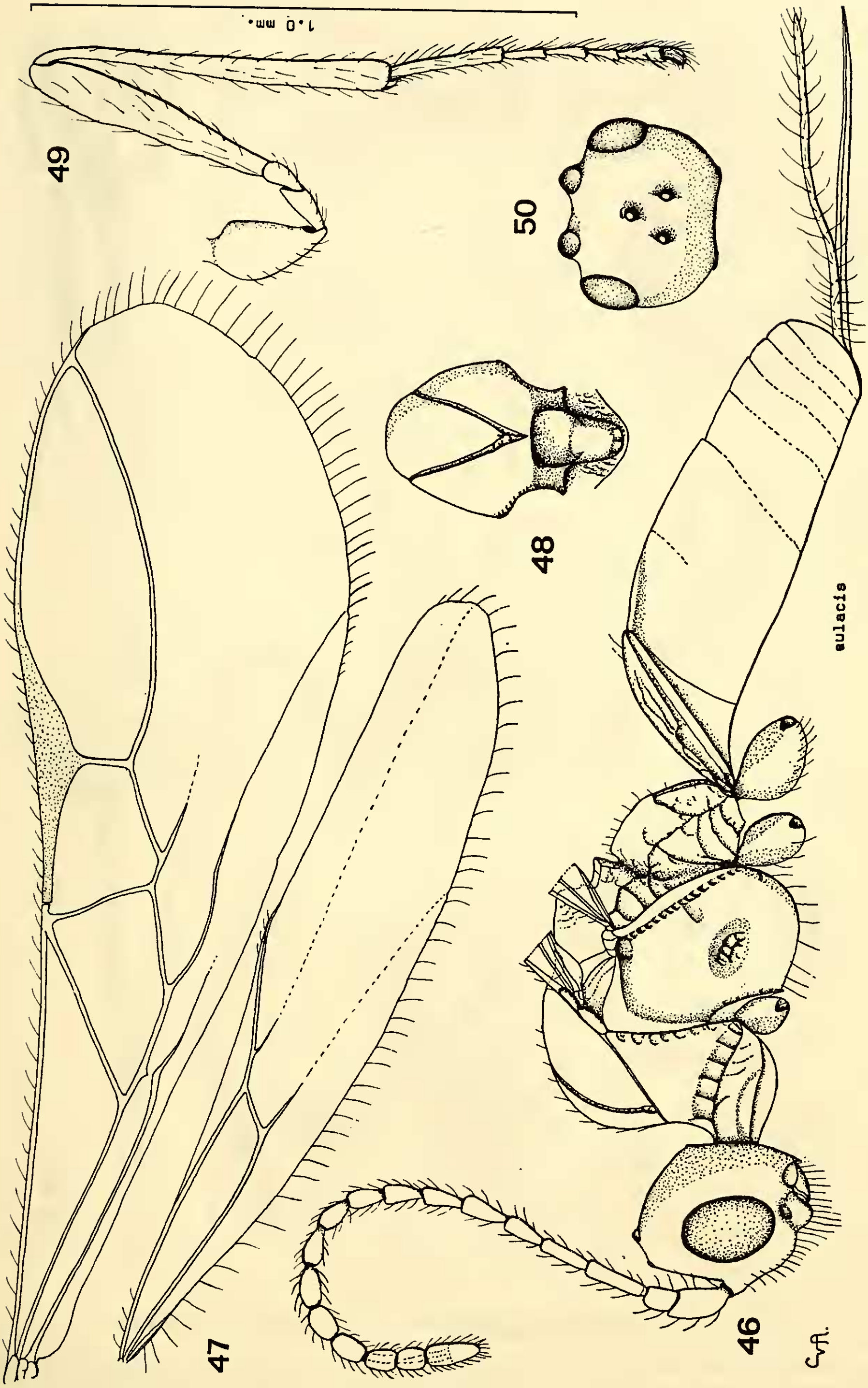

Fig. 46—50, *Blacus* (*Leioblacus*) *aulacis* spec. nov., holotype. 46, habitus, lateral aspect; 47, wings; 48, mesonotum, dorsal aspect; 49, hind leg, lateral aspect; 50, head, dorsal aspect

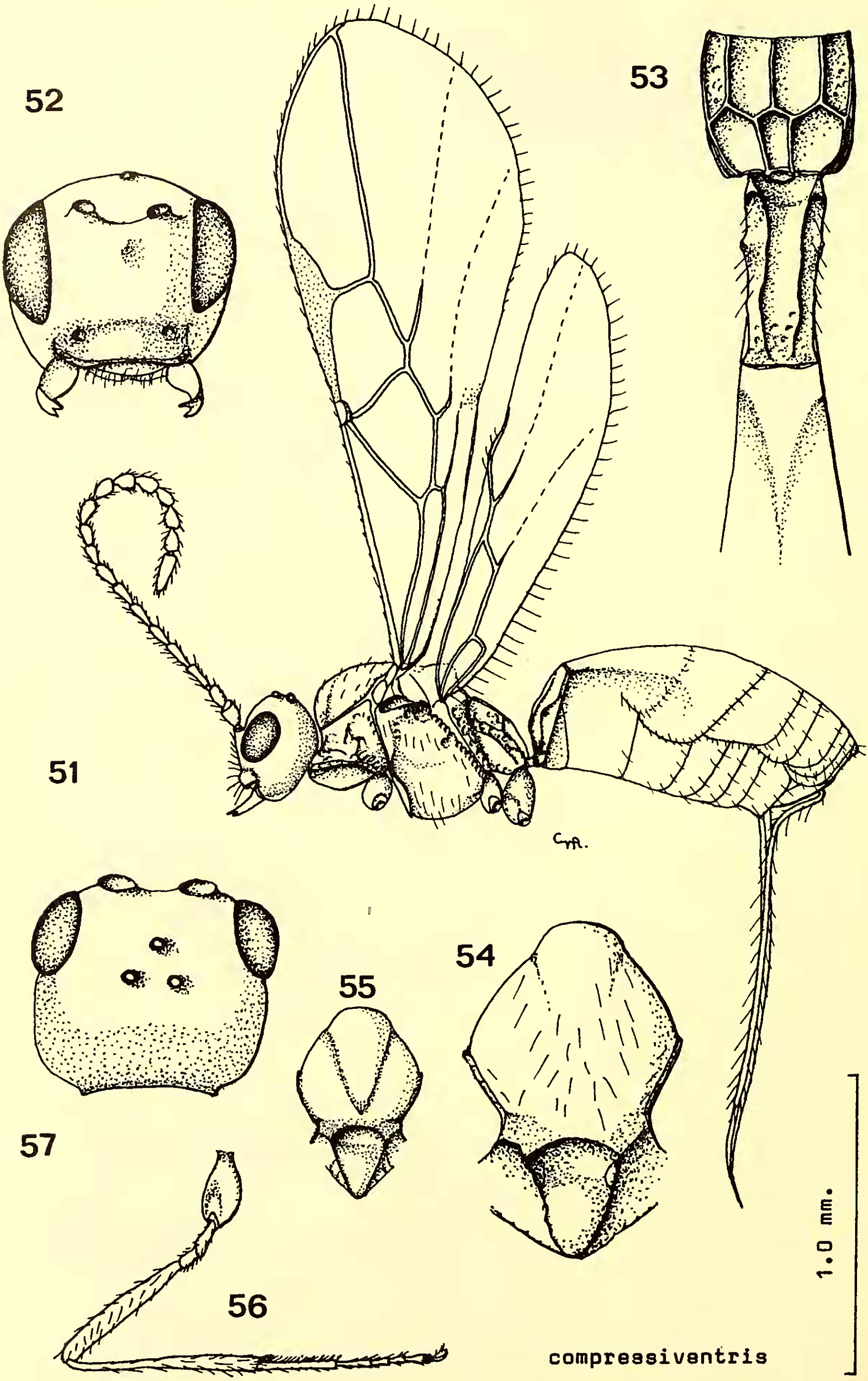

Fig. 51—57; 51—54, 56, 57, *Blacus* (*Leioblacus*) *compressiventris* spec. nov., holotype; 55, *Blacus* (*L.*) *fischeri* Haeselbarth, holotype. 51, habitus, lateral aspect; 52, head, frontal aspect; 53, propodeum, 1st and 2nd tergites, dorsal aspect; 54, 55, mesonotum, dorsal aspect; 56, hind leg, lateral aspect; 57, head, dorsal aspect. 51, 56: scale-line; 52, 53, 54, 57: 2.5 × scale-line; 55: 1.2 × scale-line

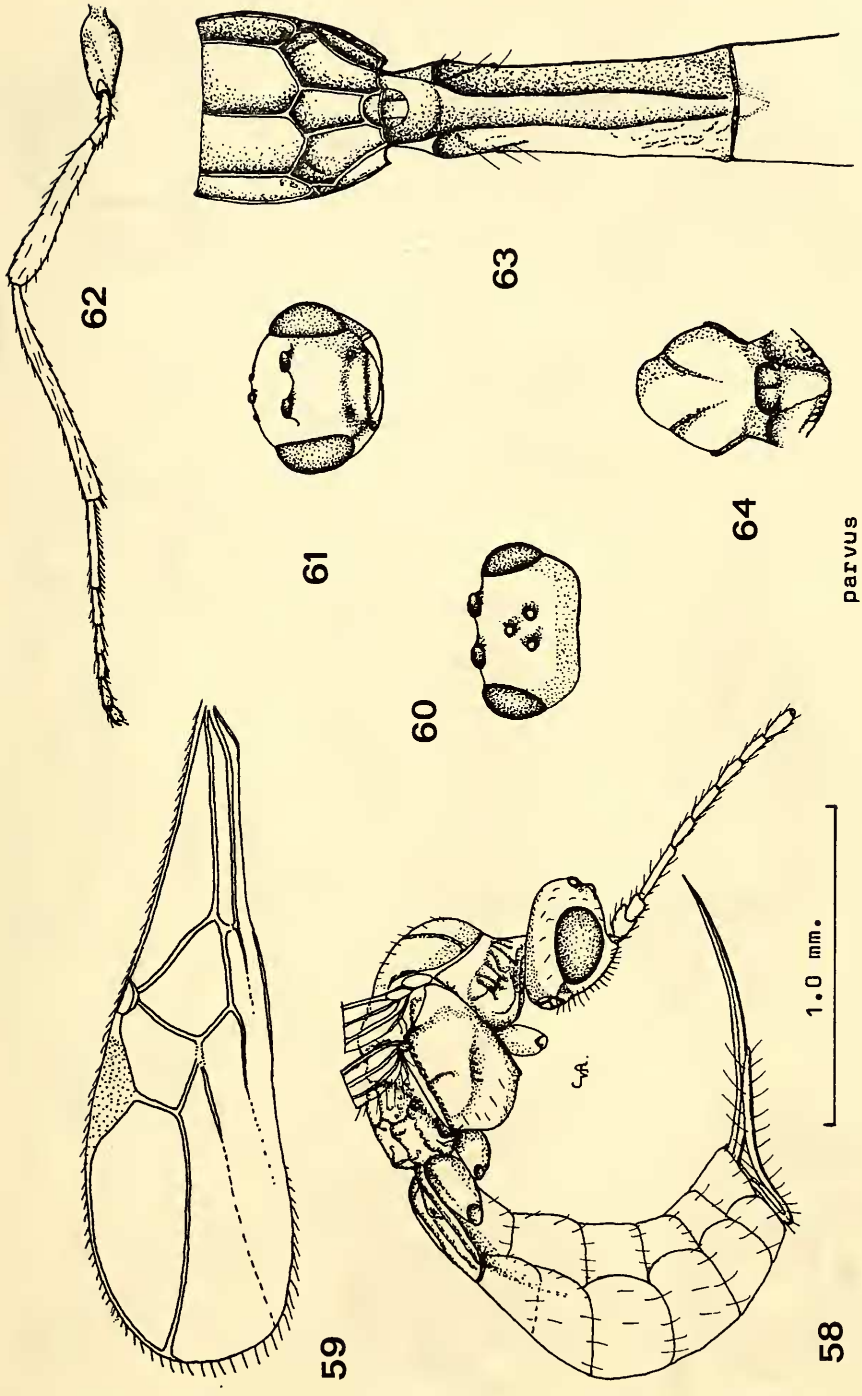

Fig. 58—64, *Blacus* (*Ischnotron*) *parvus* Haeselbarth, Elisabethville (Zaïre). 58, habitus, lateral aspect; 59, fore wing; 60, head, dorsal aspect; 61, head, frontal aspect; 62, hind leg, lateral aspect; 63, propodeum and 1st tergite, dorsal aspect; 64, mesonotum, dorsal aspect. 58, 59, 62: scale-line; 60, 61, 64: 1.2 × scale-line; 63: 2.5 × scale-line

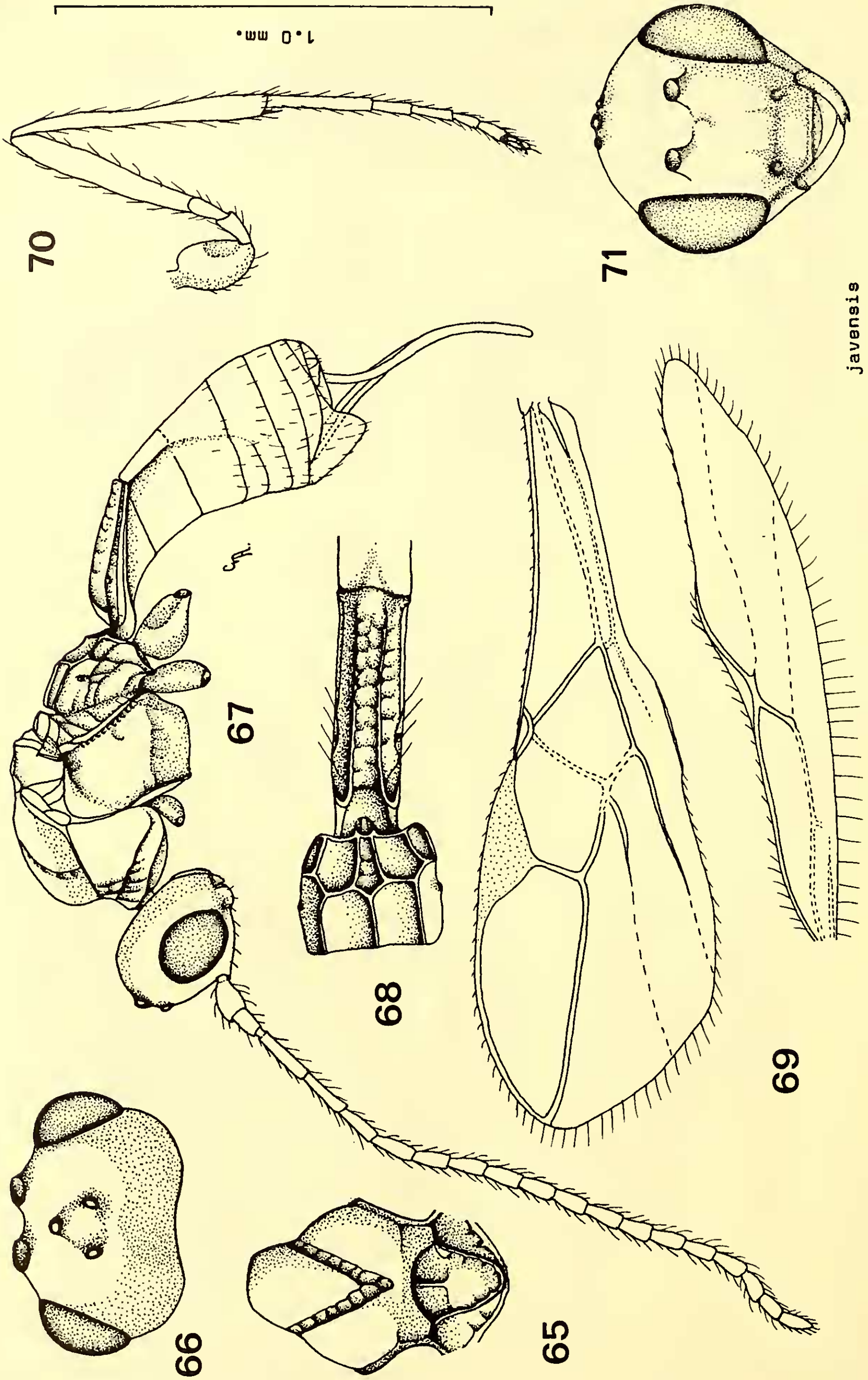

Fig. 65—71, *Blacus* (*Ischnotron*) *javensis* spec. nov., holotype. 65, mesonotum, dorsal aspect; 66, head, dorsal aspect; 67, habitus, lateral aspect; 68, propodeum and 1st tergite; dorsal aspect; 69, wings; 70, hind leg, lateral aspect; 71, head, frontal aspect. 65, 66, 68, 71: 1.5 × scale-line; 67, 69. 70: scale-line

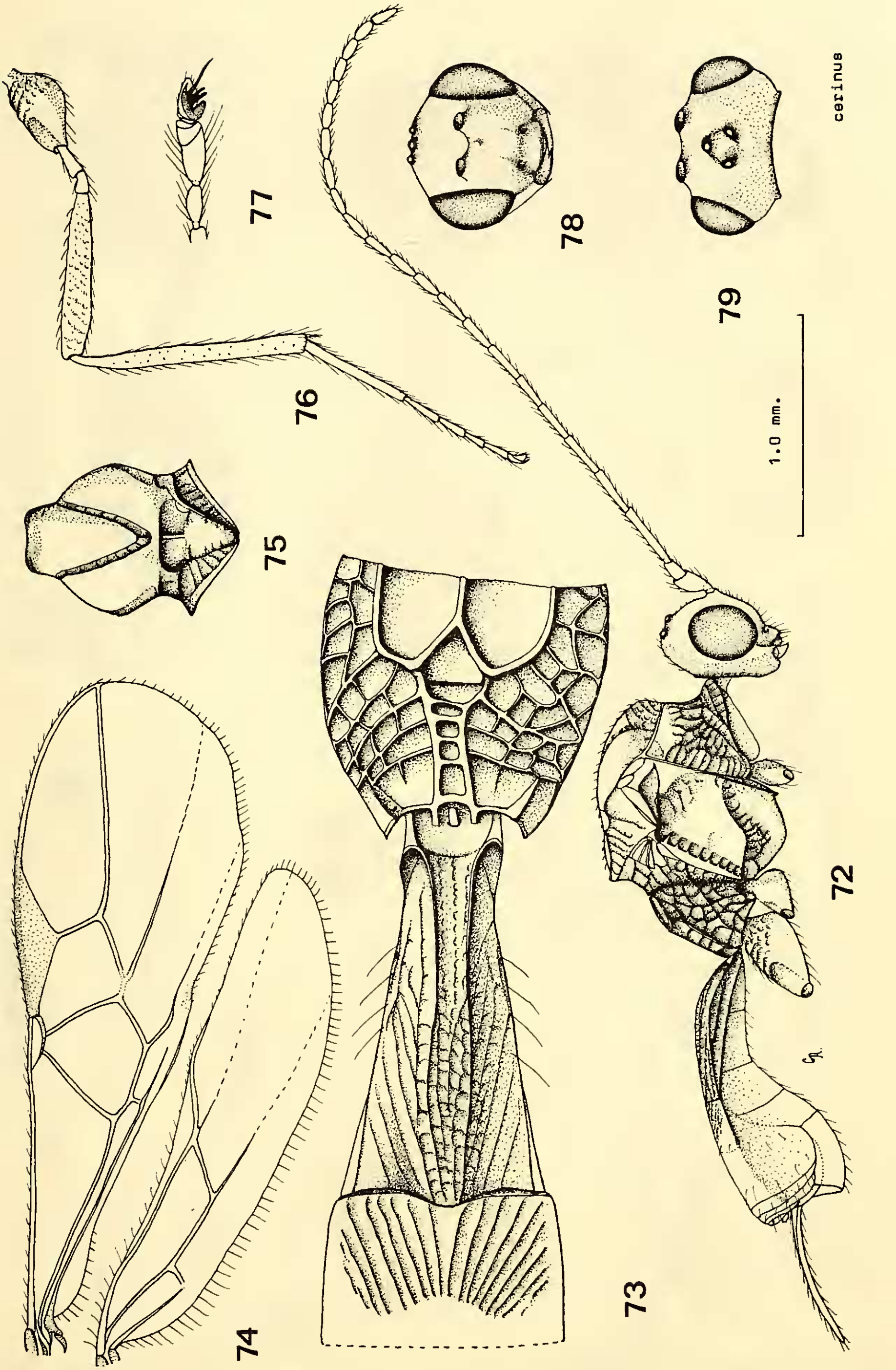

Fig. 72—79, *Blacus* (*Tarpheion*) *cerinus* spec. nov., holotype. 72, habitus, lateral aspect; 73, propodeum, 1st and 2nd tergites, dorsal aspect; 74, wings; 75, mesonotum, dorsal aspect; 76, hind leg, lateral aspect; 77, fore tarsal claw, lateral aspect; 78, head, frontal aspect; 79, head, dorsal aspect 72, 74, 76: scale-line; 75, 78, 79: 1.2 × scale-line; 73, 77: 2.5 × scale-line

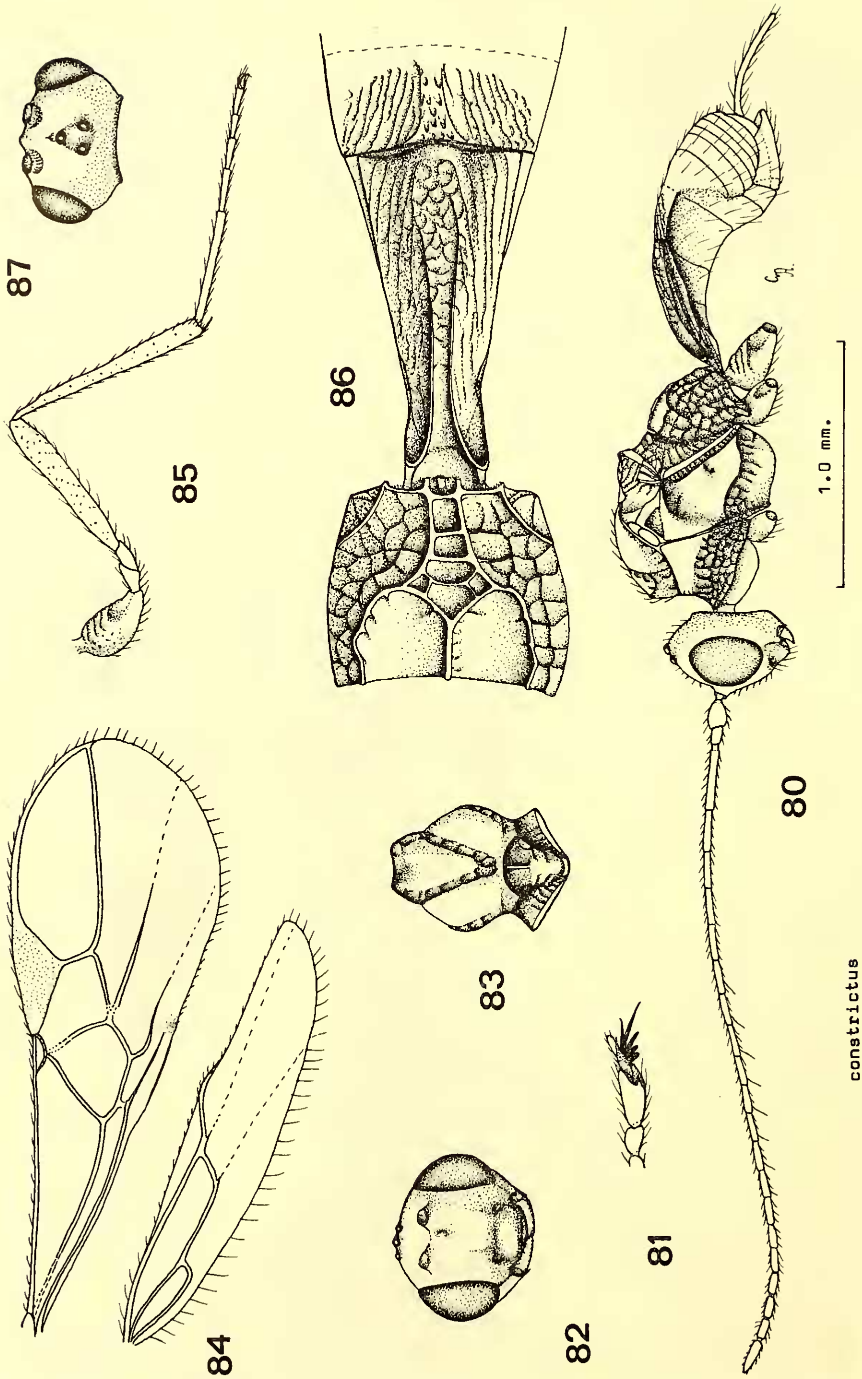

Fig. 80—87, *Blacus* (*Tarpheion*) *constrictus* spec. nov., holotype. 80, habitus, lateral aspect; 81, fore tarsal claw, lateral aspect; 82, head, frontal aspect; 83, mesonotum, dorsal aspect; 84, wings; 85, hind leg, lateral aspect; 86, propodeum, 1st and 2nd tergites, dorsal aspect; 87, head, dorsal aspect. 80, 84, 85: scale-line; 82, 83, 87: 1.2 × scale-line; 81, 86: 2.5 × scale-line

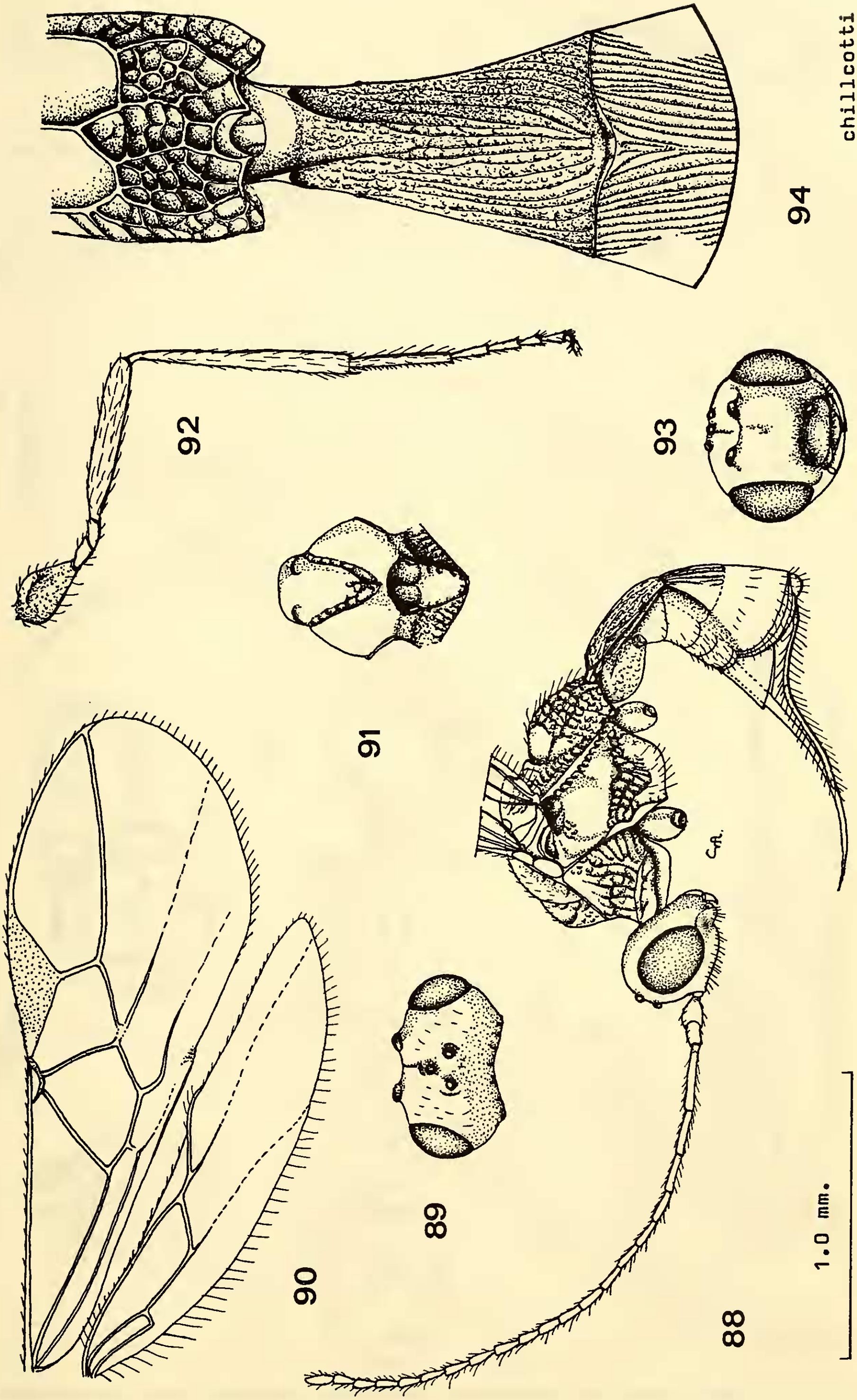

Fig. 88—94, *Blacus* (*Tarpheion*) *chillcotti* spec. nov., holotype. 88, habitus, lateral aspect; 89, head, dorsal aspect; 90, wings; 91, mesonotum, dorsal aspect; 92, hind leg, lateral aspect; 93, head, frontal aspect; 94, propodeum, 1st and 2nd tergites, dorsal aspect. 88, 90, 92: scale-line; 89, 91, 93: 1.2 × scale-line; 94: 2.5 × scale-line

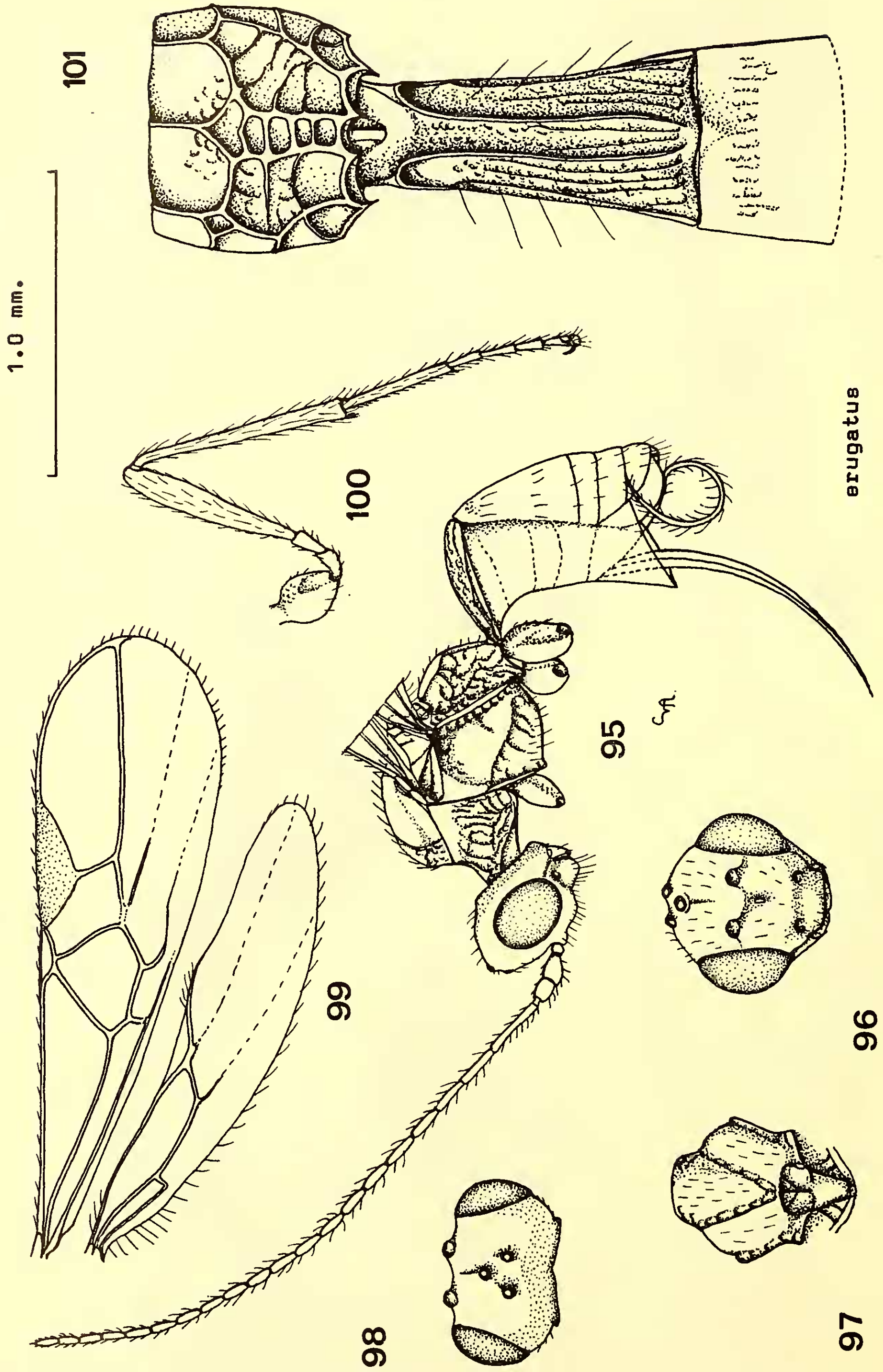

Fig. 95—101, *Blacus* (*Tarpheion*) *erugatus* spec. nov., holotype. 95, habitus, lateral aspect; 96, head, frontal aspect; 97, mesonotum, dorsal aspect; 98, head, dorsal aspect; 99, wings; 100, hind leg, lateral aspect; 101, propodeum, 1st and 2nd tergites. 95, 99, 100: scale-line; 96—98: 1.2 × scale-line; 101: 2.5 × scale-line

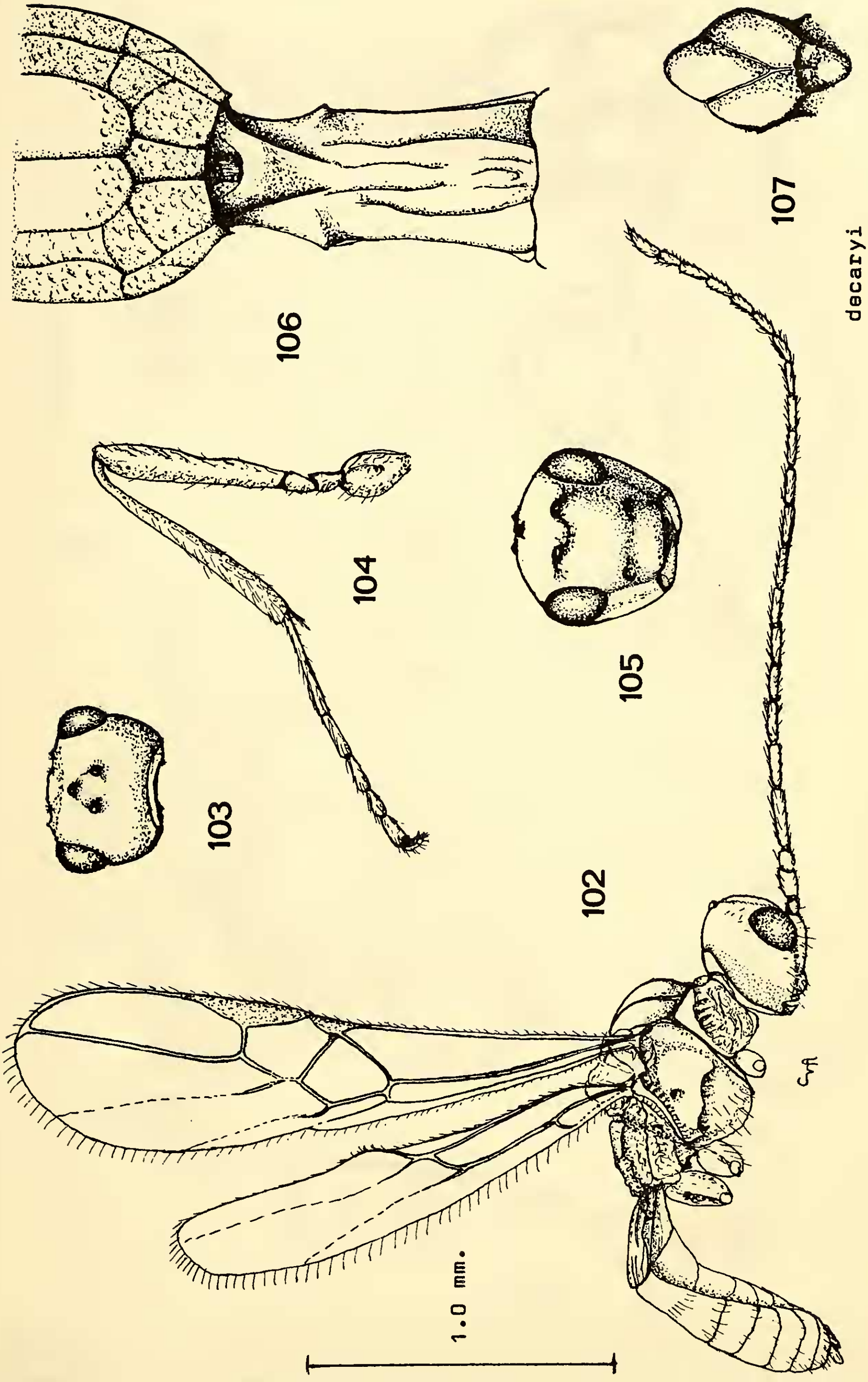

Fig. 102—107, *Blacus* (*Tarpheion*) *decaryi* Granger, holotype. 102, habitus, lateral aspect; 103, head, dorsal aspect; 104, hind leg, lateral aspect; 105, head, frontal aspect; 106, propodeum and 1st tergite, dorsal aspect; 107, mesonotum, dorsal aspect. 102, 104: scale-line; 103, 105, 107: 1.2 × scale-line; 106, 3.0 × scale-line

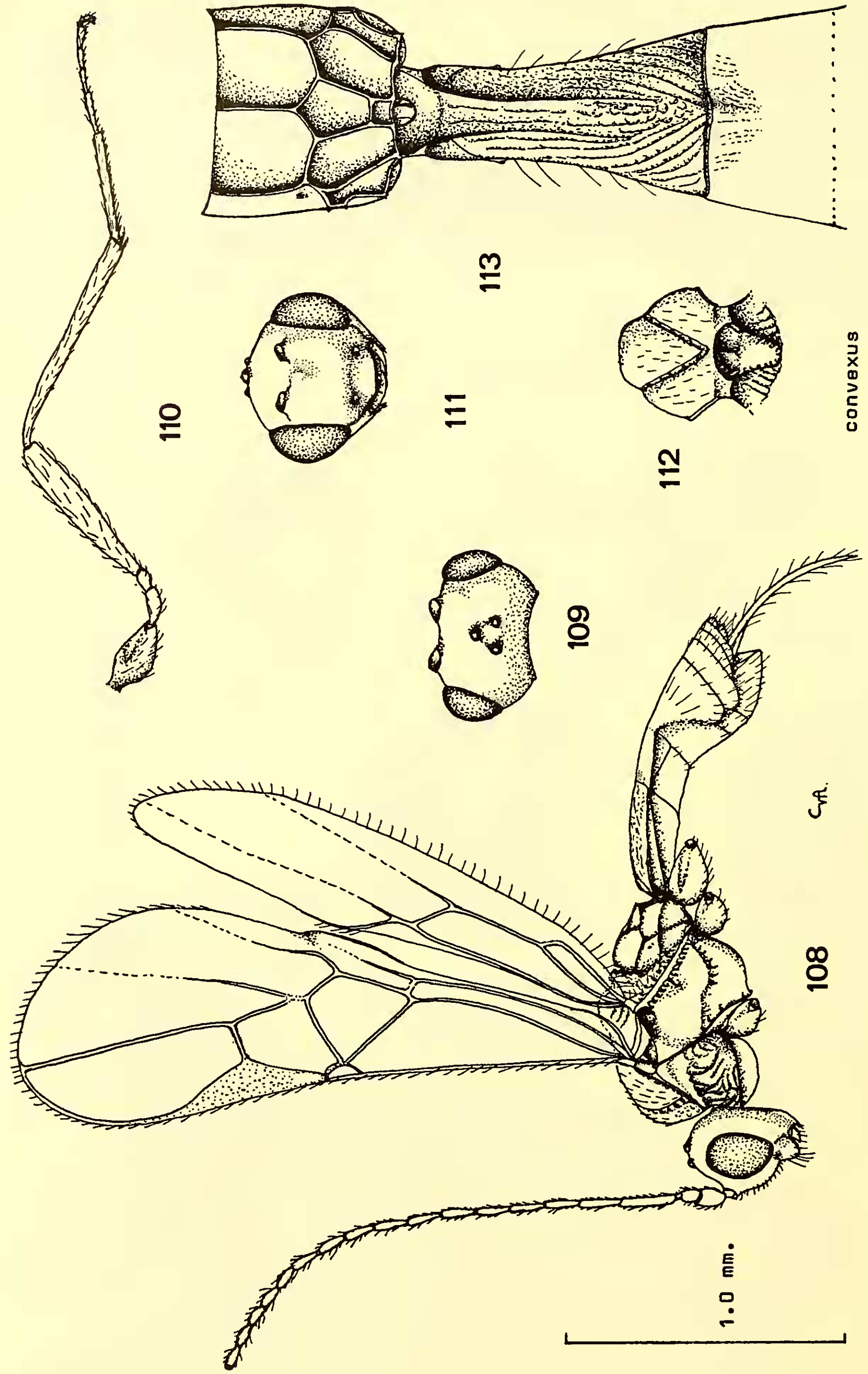

Fig. 108—113, *Blacus* (*Tarpheion*) *convexus* spec. nov., holotype. 108, habitus, lateral aspect; 109, head, dorsal aspect; 110, hind leg, lateral aspect; 111, head, frontal aspect; 112, mesonotum, dorsal aspect; 113, propodeum, 1st and 2nd tergites. 108, 110: scale-line; 109—112: 1.2 × scale-line; 113: 2.5 × scale-line

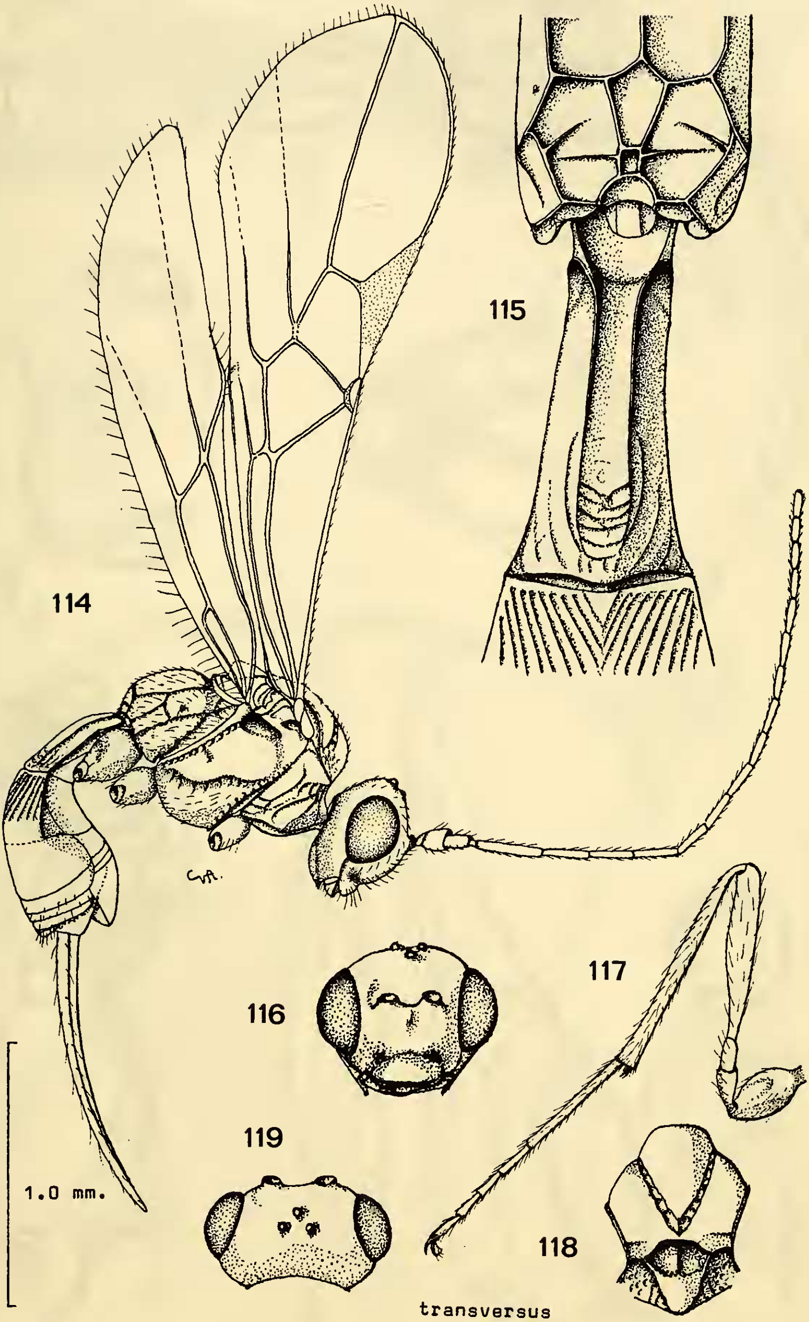

Fig. 114—119, *Blacus* (*Tarpheion*) *transversus* spec. nov., holotype. 114, habitus, lateral aspect; 115, propodeum, 1st and 2nd tergites; 116, head, frontal aspect; 117, hind leg, lateral aspect; 118, mesonotum, dorsal aspect; 119, head, dorsal aspect. 114, 117: scale-line; 116, 118, 119: 1.2 × scale-line; 115: 3.0 × scale-line

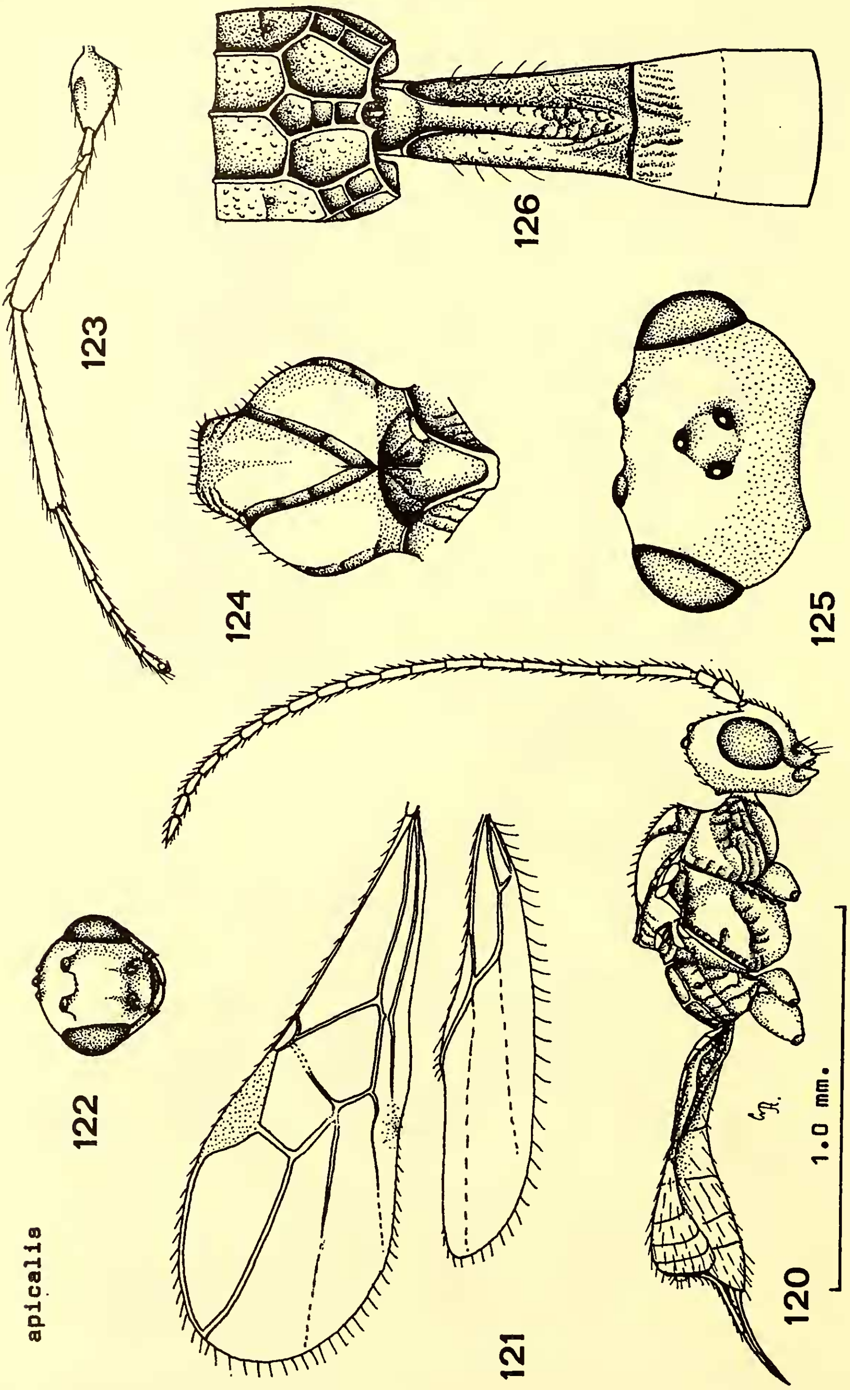

Fig. 120—126, *Blacus* (*Tarpheion*) *apicalis* spec. nov., holotype. 120, habitus, lateral aspect; 121, wings; 122, head, frontal aspect; 123, hind leg, lateral aspect; 124, mesonotum, dorsal aspect; 125, head, dorsal aspect; 126, propodeum, 1st-3rd tergites, dorsal aspect. 120, 121, 123: scale-line; 122, 124—126: 2.1 × scale-line

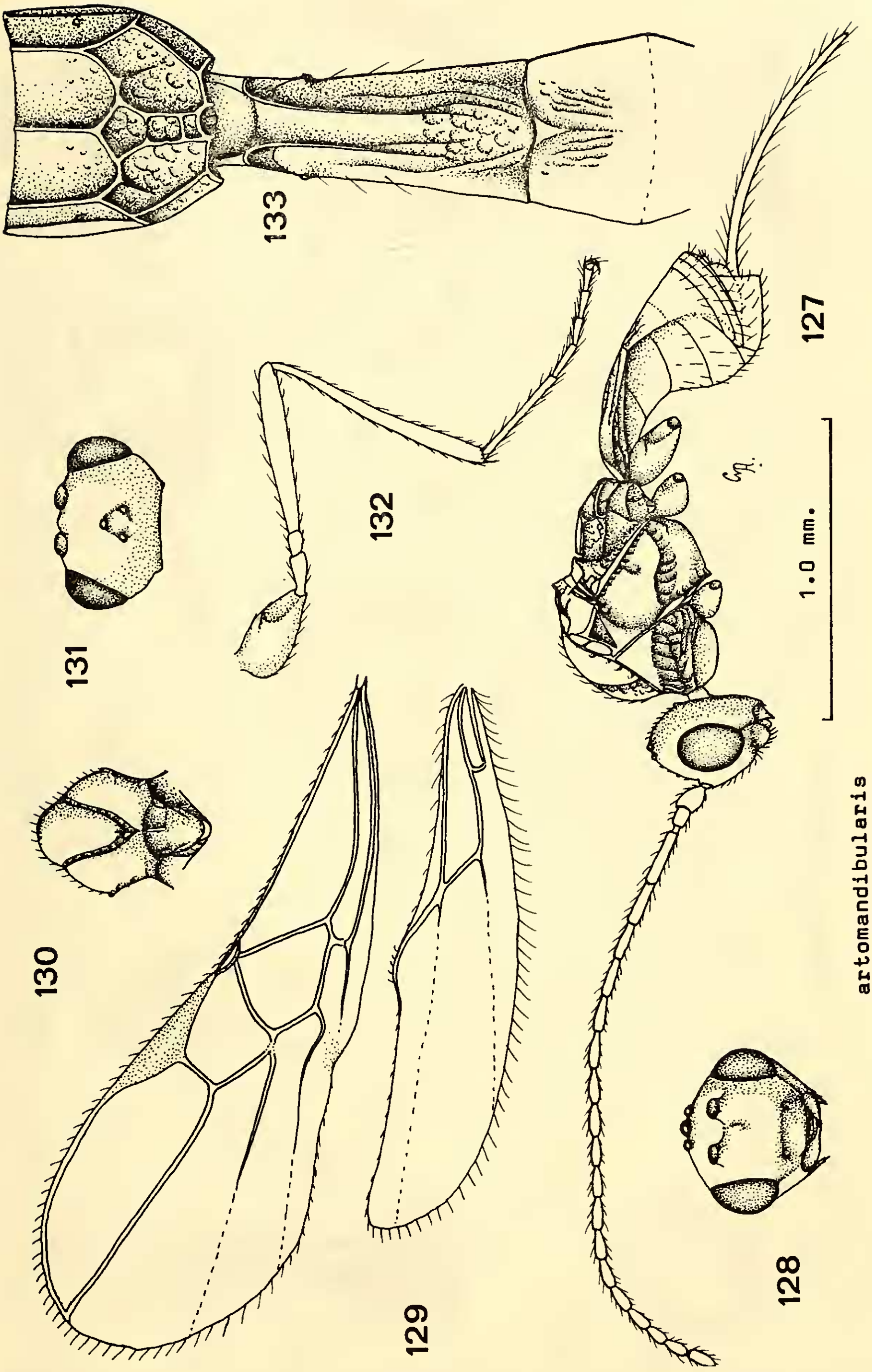

Fig. 127—133, *Blacus* (*Tarpheion*) *artomandibularis* spec. nov., holotype. 127, habitus, lateral aspect; 128, head, frontal aspect; 129, wings; 130, mesonotum, dorsal aspect; 131, head, dorsal aspect; 132, hind leg, lateral aspect; 133, 1st and 2nd tergites, dorsal aspect. 127, 129, 132: scale-line; 128, 130, 131: 1.2 × scale-line; 133: 2.5 × scale-line

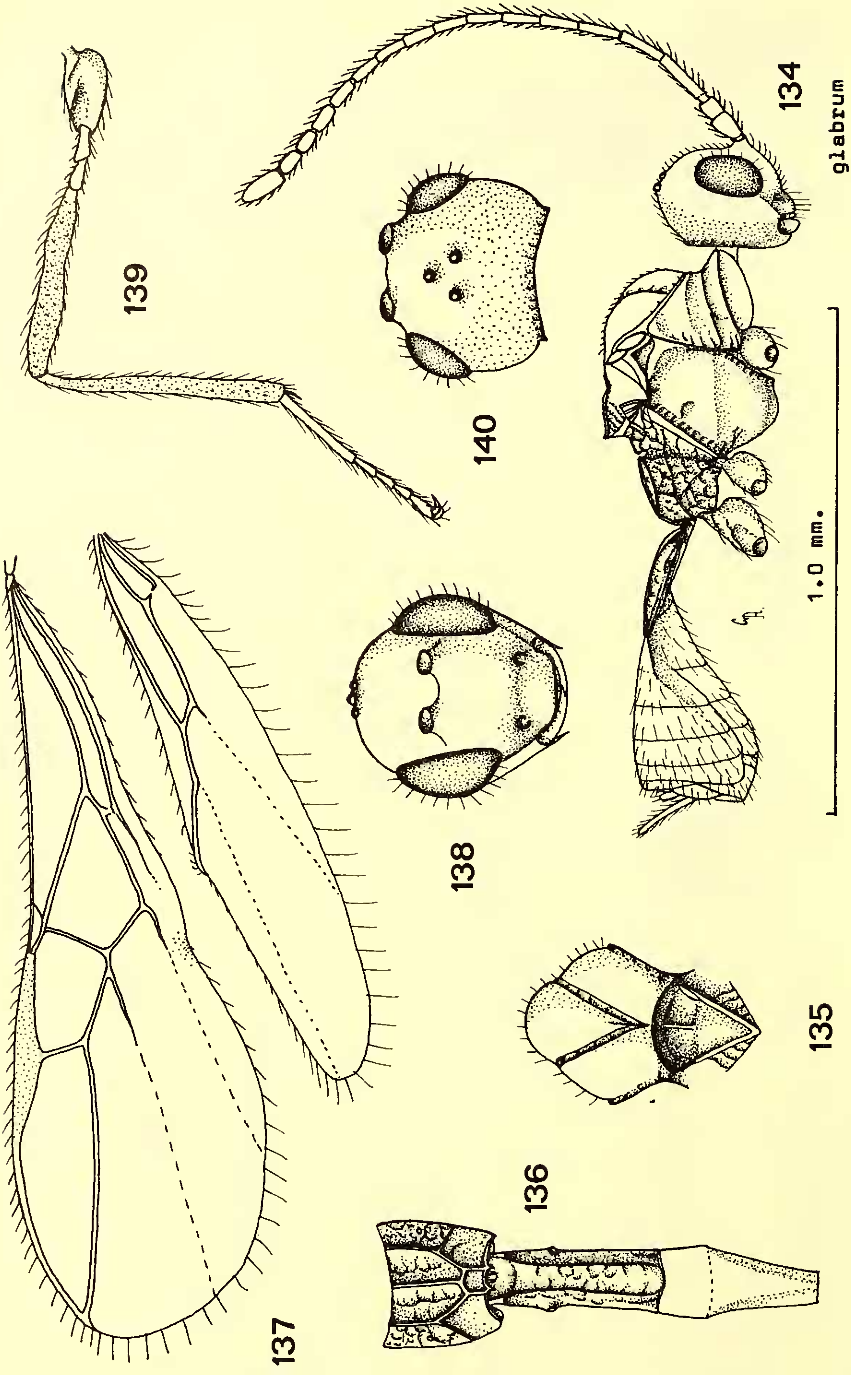

Fig. 134—140, *Blacus* (*Contochorus*) *glabrum* spec. nov., holotype. 134, habitus, lateral aspect; 135, mesonotum, dorsal aspect; 136, propodeum, 1st-3rd tergites, dorsal aspect; 137, wings; 138, head, frontal aspect; 139, hind leg, lateral aspect; 140, head, dorsal aspect. 134, 137, 139: scale-line; 135, 136, 138, 140: 1.5 × scale-line

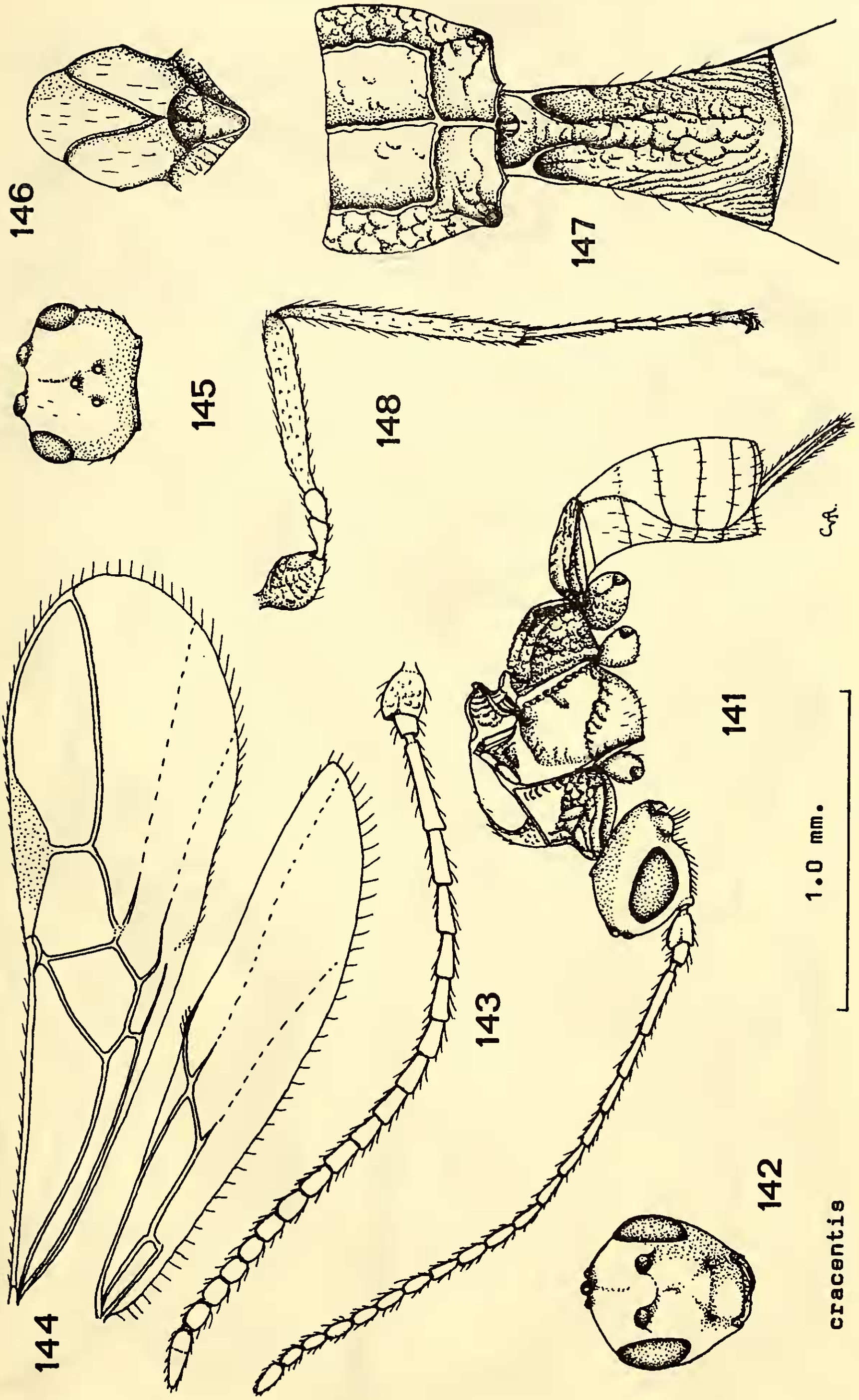

Fig. 141—148, *Blacus* (*Ganychorus*) *cracentis* spec. nov.; 141, 142, 144—148, holotype; 143, paratype. 141, habitus, lateral aspect; 142, head, frontal aspect; 143, antenna, lateral aspect; 144, wings; 145, head, dorsal aspect; 146, mesonotum, dorsal aspect; 147, propodeum and 1st tergite, dorsal aspect; 148, hind leg, lateral aspect. 141, 143, 144, 148: scale-line; 142, 145, 146: 1.2 × scale-line; 147: 2.5 × scale-line

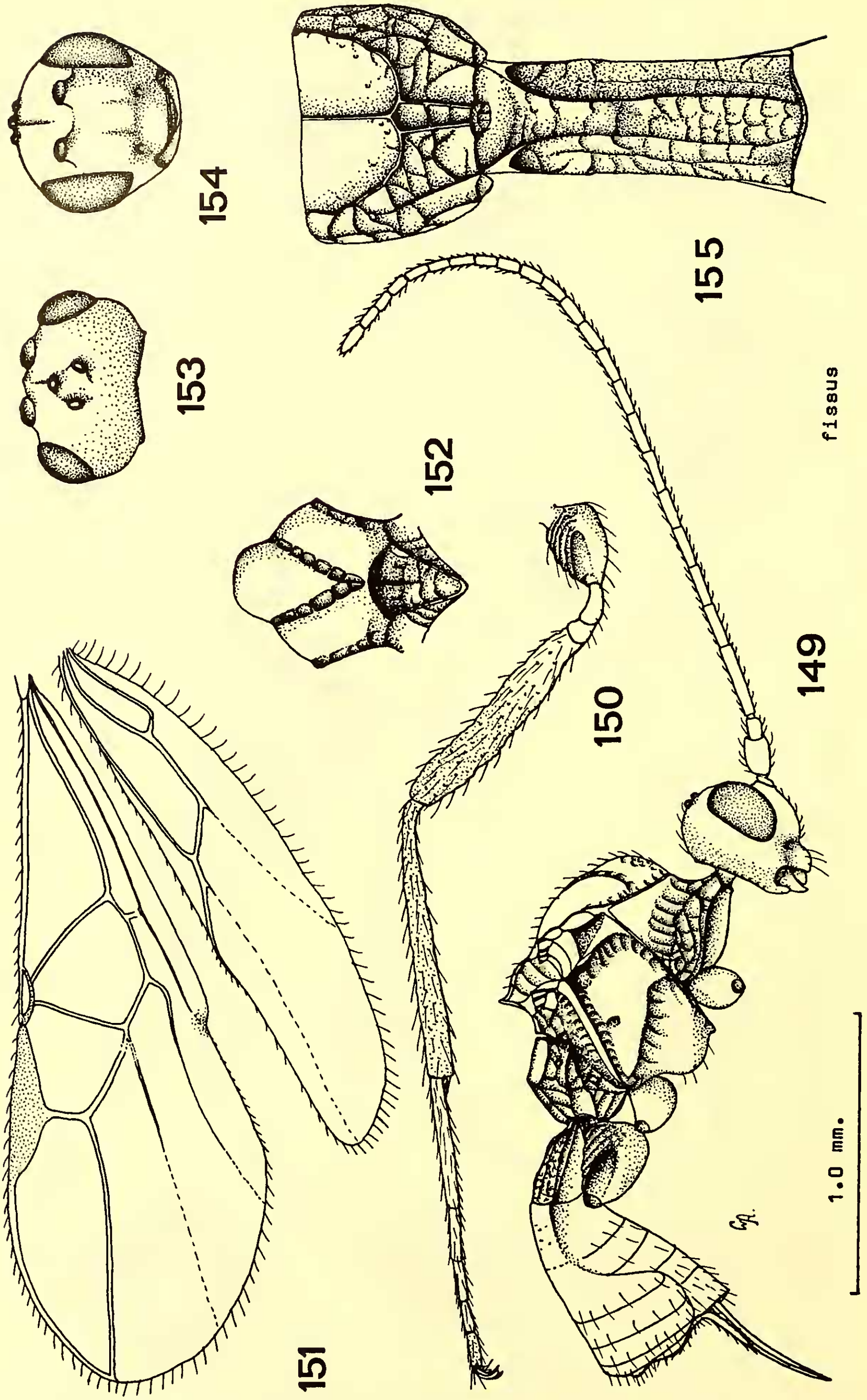

Fig. 149—155, *Blacus* (*Ganychorus*) *fissus* spec. nov., holotype. 149, habitus, lateral aspect; 150, hind leg, lateral aspect; 151, wings; 152, mesonotum, dorsal aspect; 153, head, dorsal aspect; 153, head, frontal aspect; 155, propodeum, and 1st tergite, dorsal aspect. 149—151: scale-line; 152—154: 1.2 × scale-line; 155: 2.5 × scale-line

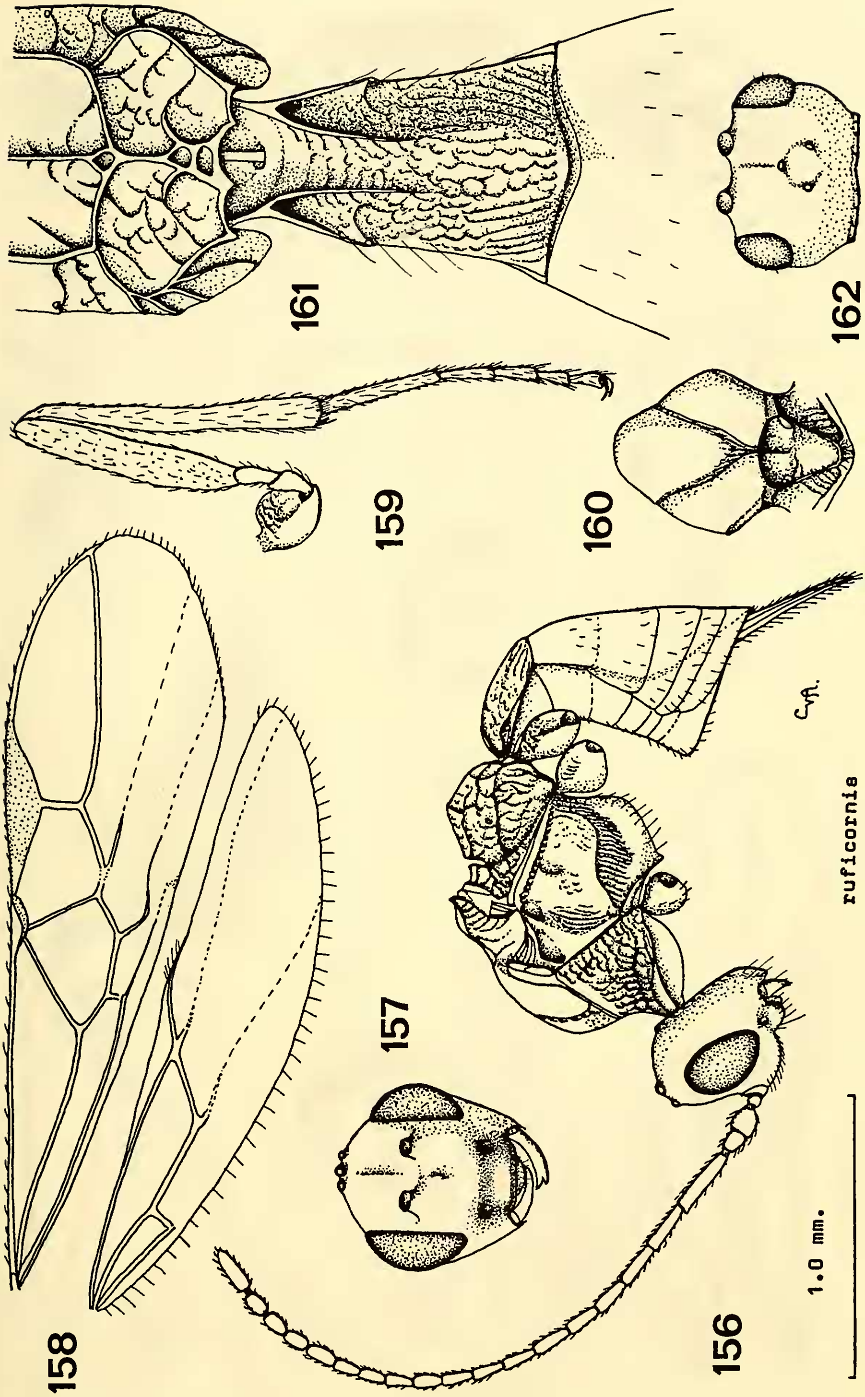

Fig. 156—162, *Blacus* (*Ganychorus*) *ruficornis* (Nees), Val Marie (Saskatchewan). 156, habitus, lateral aspect; 157, head, frontal aspect; 158, wings; 159, hind leg, lateral aspect; 160, mesonotum, dorsal aspect; 161, propodeum and 1st tergite, dorsal aspect; 162, head, dorsal aspect. 156, 158, 159: scale-line; 157, 160, 162: 1.2 × scale-line; 161: 2.5 × scale-line

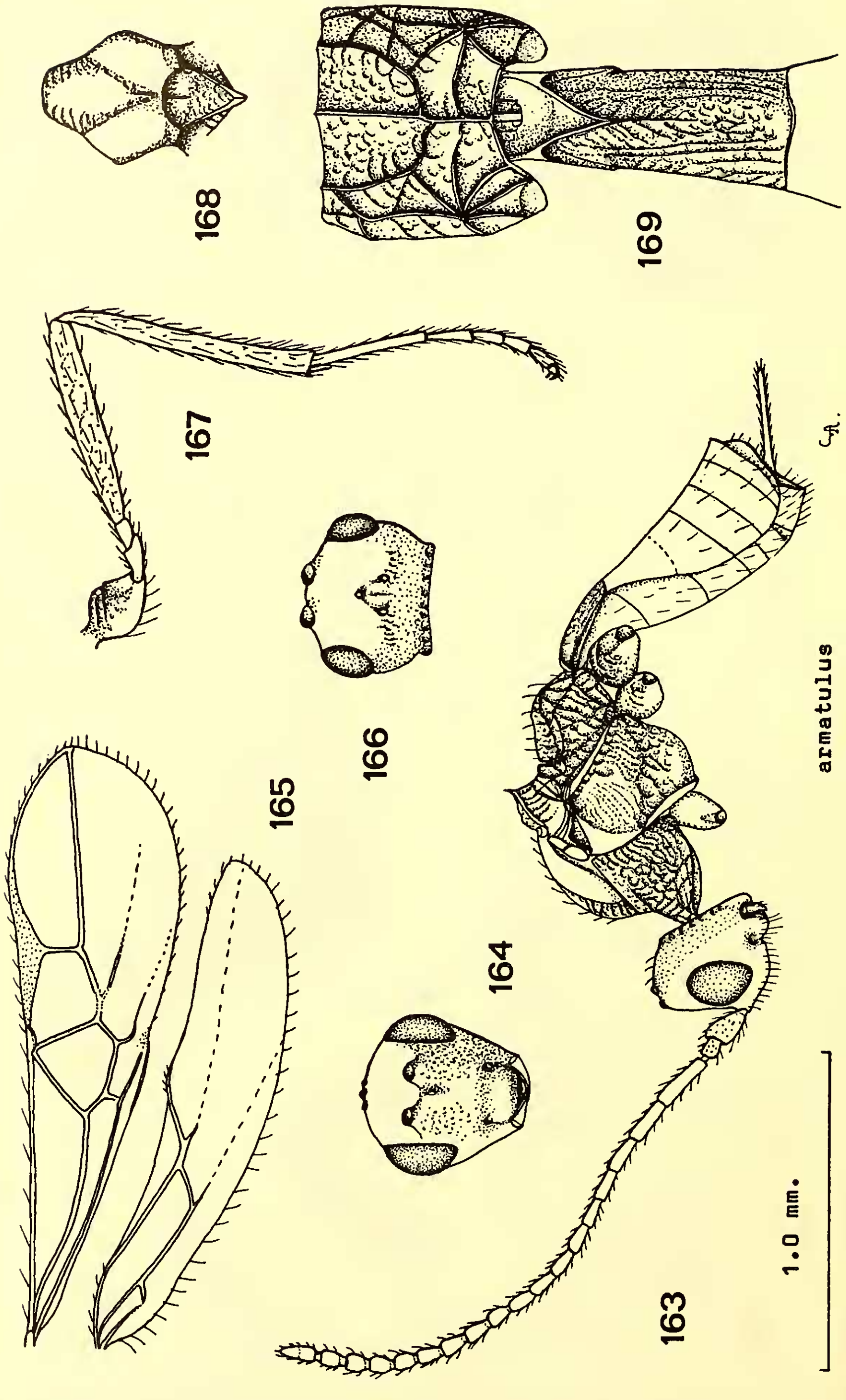

Fig. 163—169, *Blacus* (*Ganychorus*) *armatulus* Ruthe, Innisville (Ontario). 163, habitus, lateral aspect; 164, head, frontal aspect; 165, wings; 166, head, dorsal aspect; 167, hind leg, lateral aspect; 168, mesonotum, dorsal aspect; 169, propodeum and 1st tergite, dorsal aspect. 163, 165, 167: scale-line; 164, 166, 168: 1.2 × scale-line; 169: 2.5 × scale-line

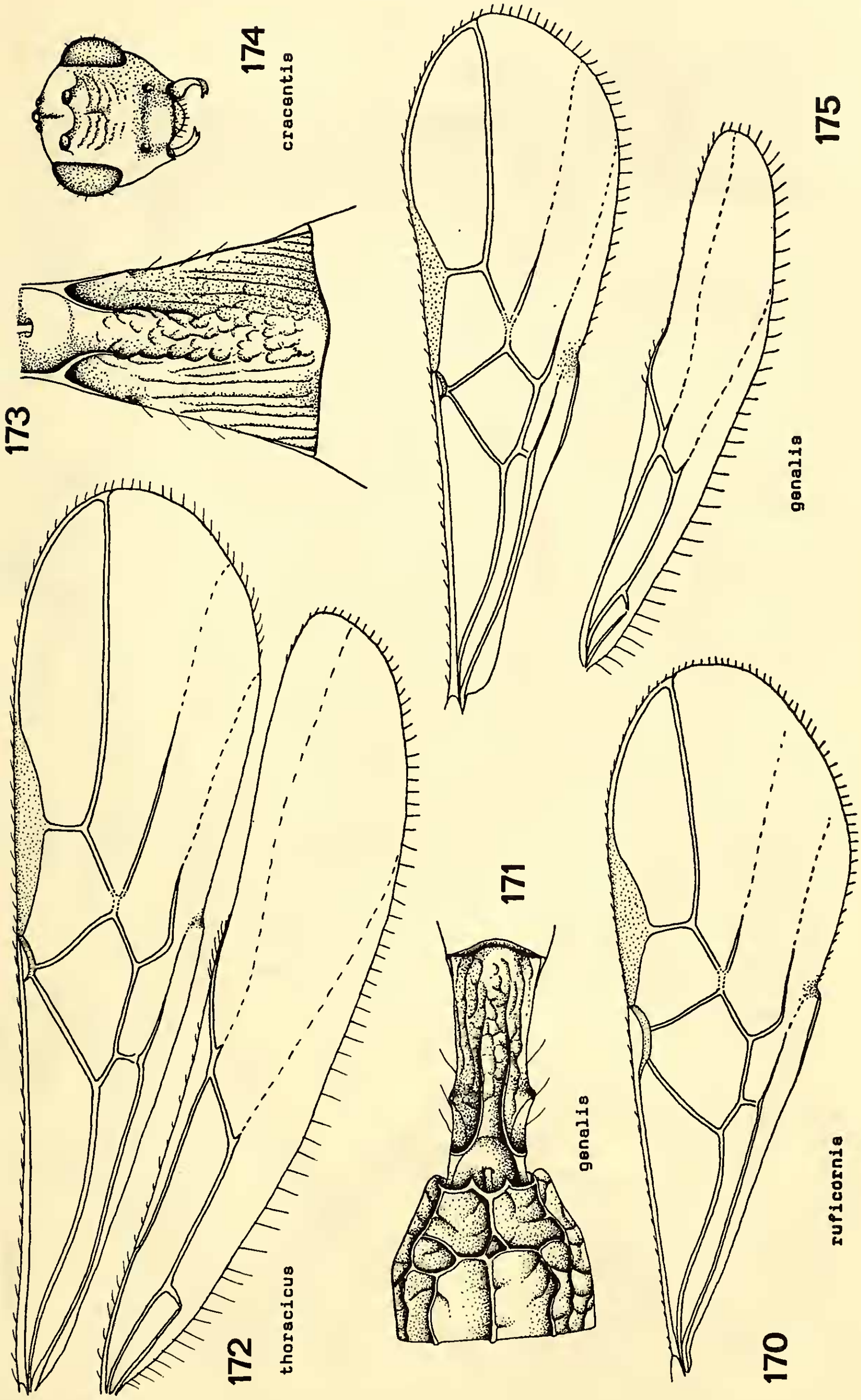

Fig. 170—175. 170, *Blacus* (*Ganychorus*) *ruficornis* (Nees), ♂, Kerrville (Texas), fore wing; 171, 175, *Blacus* (*G.*) *genalis* Haeselbarth, ♀, Lubumbashi (Zaïre); 171, propodeum and 1st tergite; 175, wings; 172, *Blacus* (*G.*) *thoracicus* spec. nov., holotype, wings; 173, 174, *Blacus* (*G.*) *cracentis* spec. nov., paratype; 174, 1st tergite; 175, head, frontal aspect. 170, 172: scale-line of Fig. 176; 171, 173: 2.5 × scale-line of Fig. 176; 174, 175: 1.2 × scale-line of Fig. 176

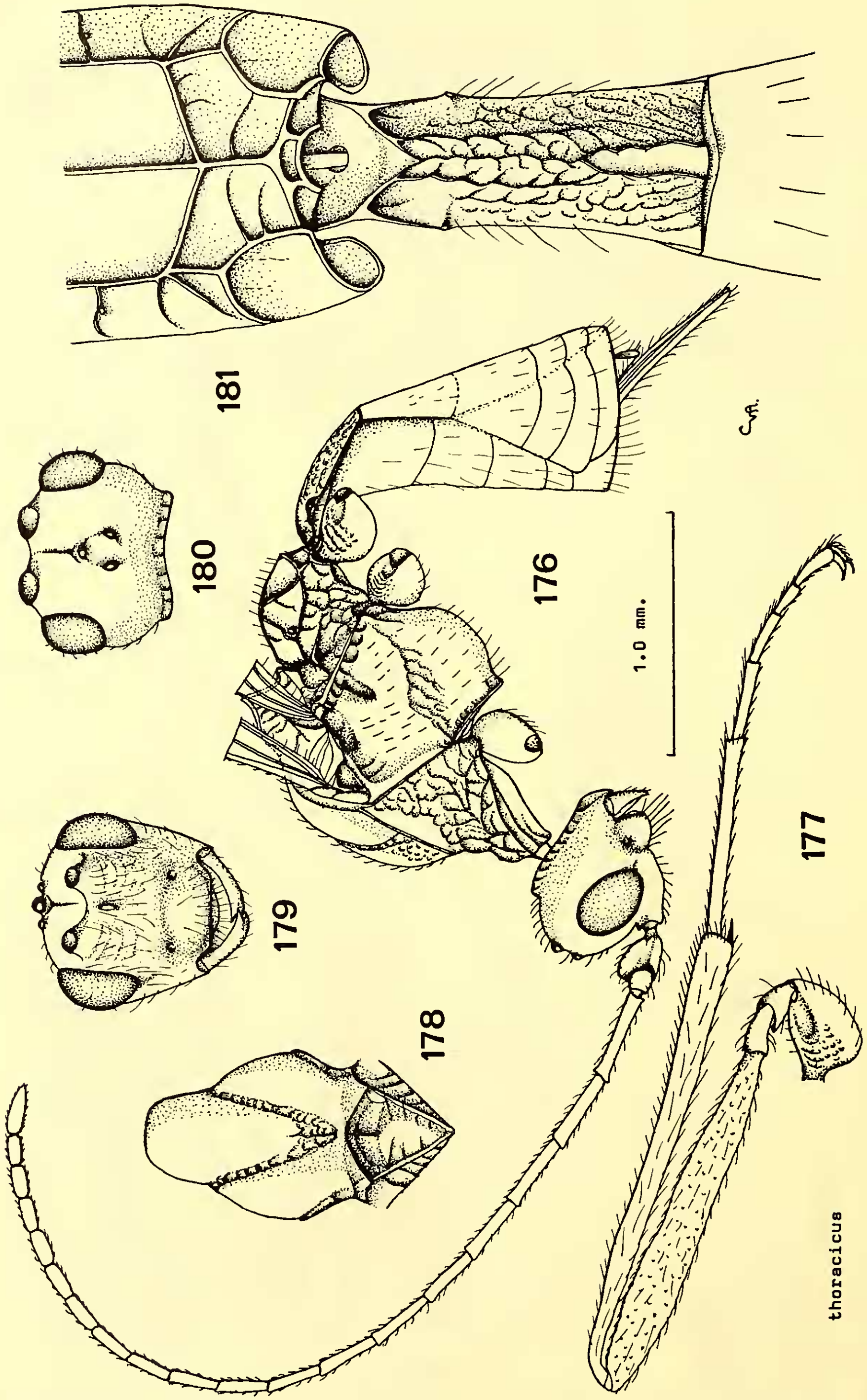

Fig. 176—181, *Blacus* (*Ganychorus*) *thoracicus* spec. nov., holotype. 176, habitus, lateral aspect; 177, hind leg, lateral aspect; 178, mesonotum, dorsal aspect; 179, head, frontal aspect; 180, head, dorsal aspect; 181, propodeum and 1st tergite, dorsal aspect. 176, 177: scale-line; 178—180: 1.2 × scale-line; 181: 2.5 × scale-line

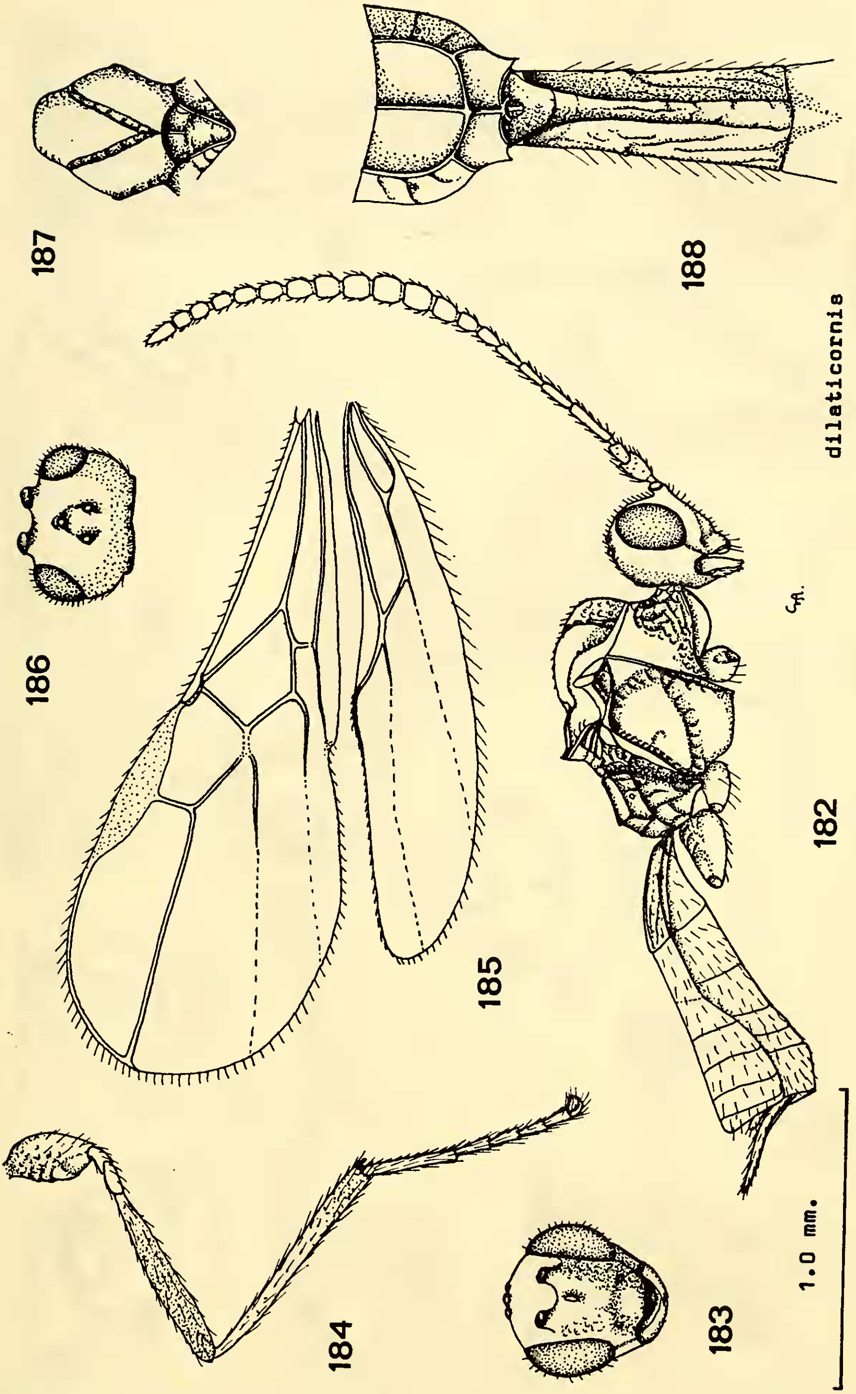

Fig. 182—188, *Blacus* (*Ganychorus*) *dilaticornis* spec. nov., holotype. 182, habitus, lateral aspect; 183, head, frontal aspect; 184, hind leg, lateral aspect; 185, wings; 186, head, dorsal aspect; 187, mesonotum, dorsal aspect; 188, propodeum and 1st tergite, dorsal aspect. 182, 184, 185: scale-line; 183, 186, 187: 1.2 × scale-line; 188: 2.5 × scale-line

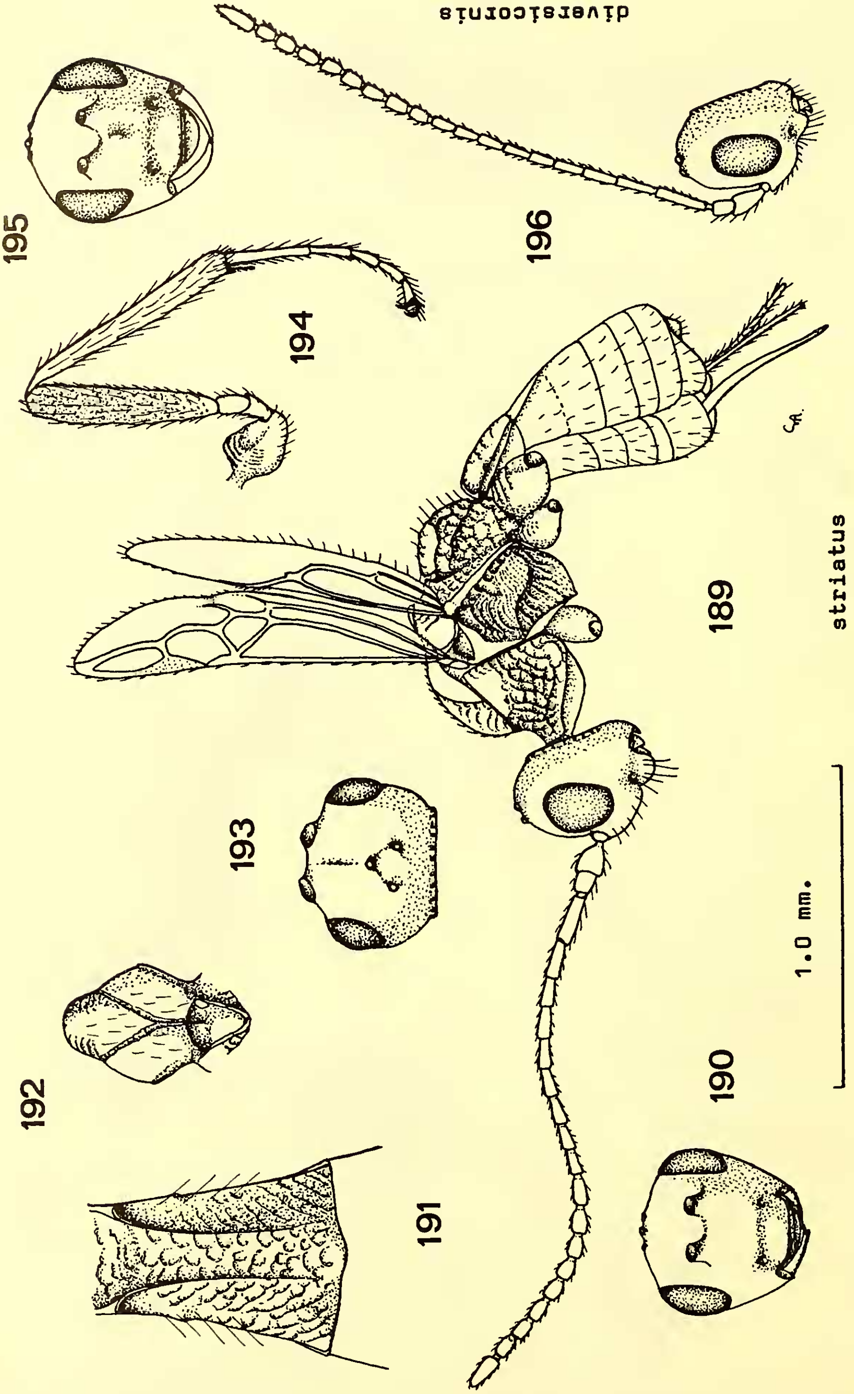

Fig. 189—196. 189—194, *Blacus* (*Ganychorus*) *striatus* spec. nov., micropterous paratype; 189, habitus, lateral aspect; 190, head, frontal aspect; 191, 1st tergite, dorsal aspect; 192, mesonotum, dorsal aspect; 193, head, dorsal aspect 194, hind leg, lateral aspect. 195, 196, *Blacus* (*G.*) *diversicornis* (Nees), Lübke (West Germany); 195, head, frontal aspect; 196, head, lateral aspect. 189, 194, 196: scale-line; 190, 192, 193, 195: 1.2 × scale-line; 191: 2.5 × scale-line

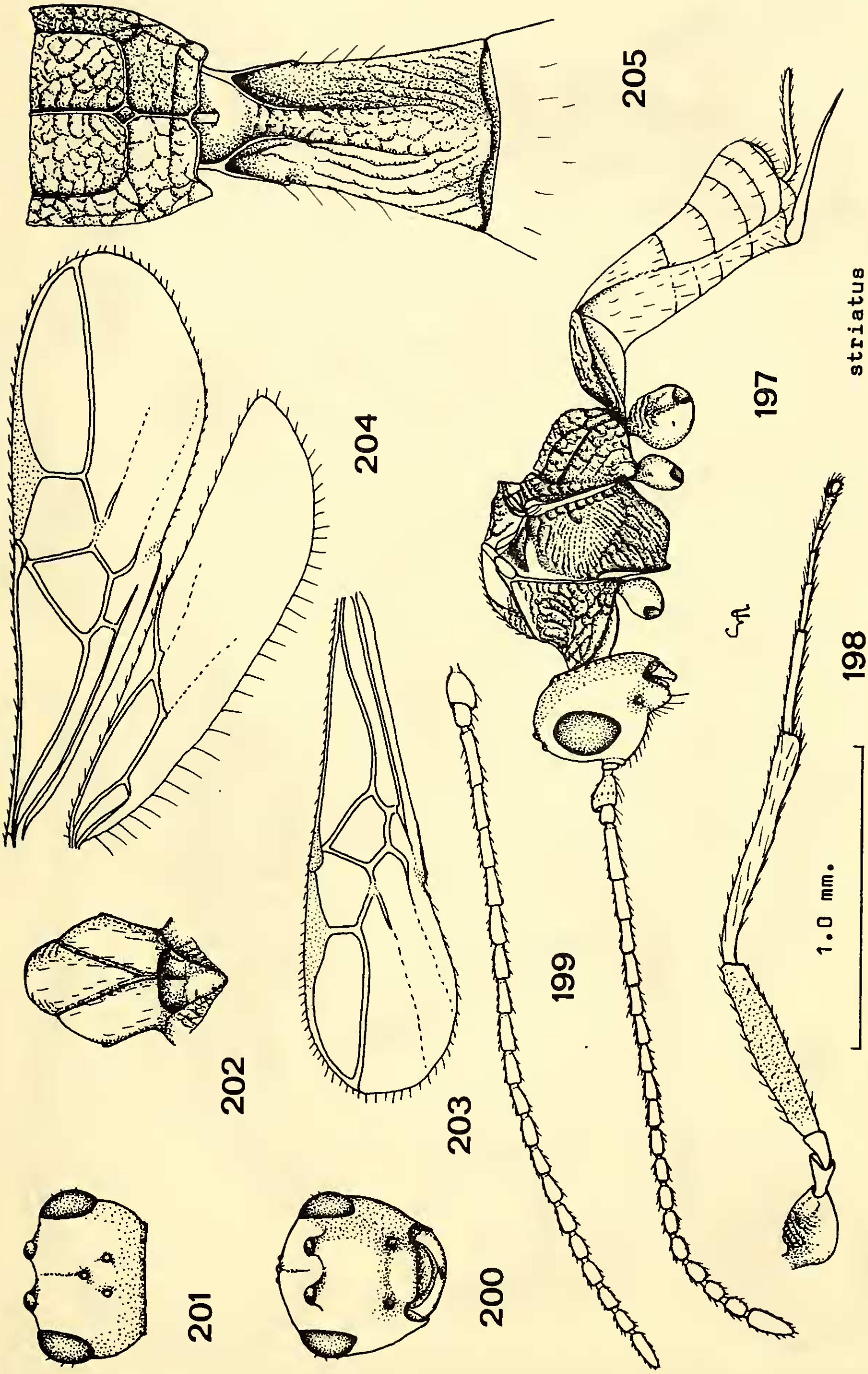

Fig. 197—205, *Blacus* (*Ganychorus*) *striatus* spec. nov., 197, 198, 200—205, holotype; 199, 203, ♂, Chatterton (Ontario). 197, habitus, lateral aspect; 198, hind leg, lateral aspect; 199, antenna, lateral aspect; 200, head, frontal aspect; 201, head, dorsal aspect; 202, mesonotum, dorsal aspect; 203, fore wing; 204, wings; 205, propodeum and 1st tergite. 197—199, 203—204: scale-line; 200—202: 1.2 × scale-line; 205: 2.5 × scale-line

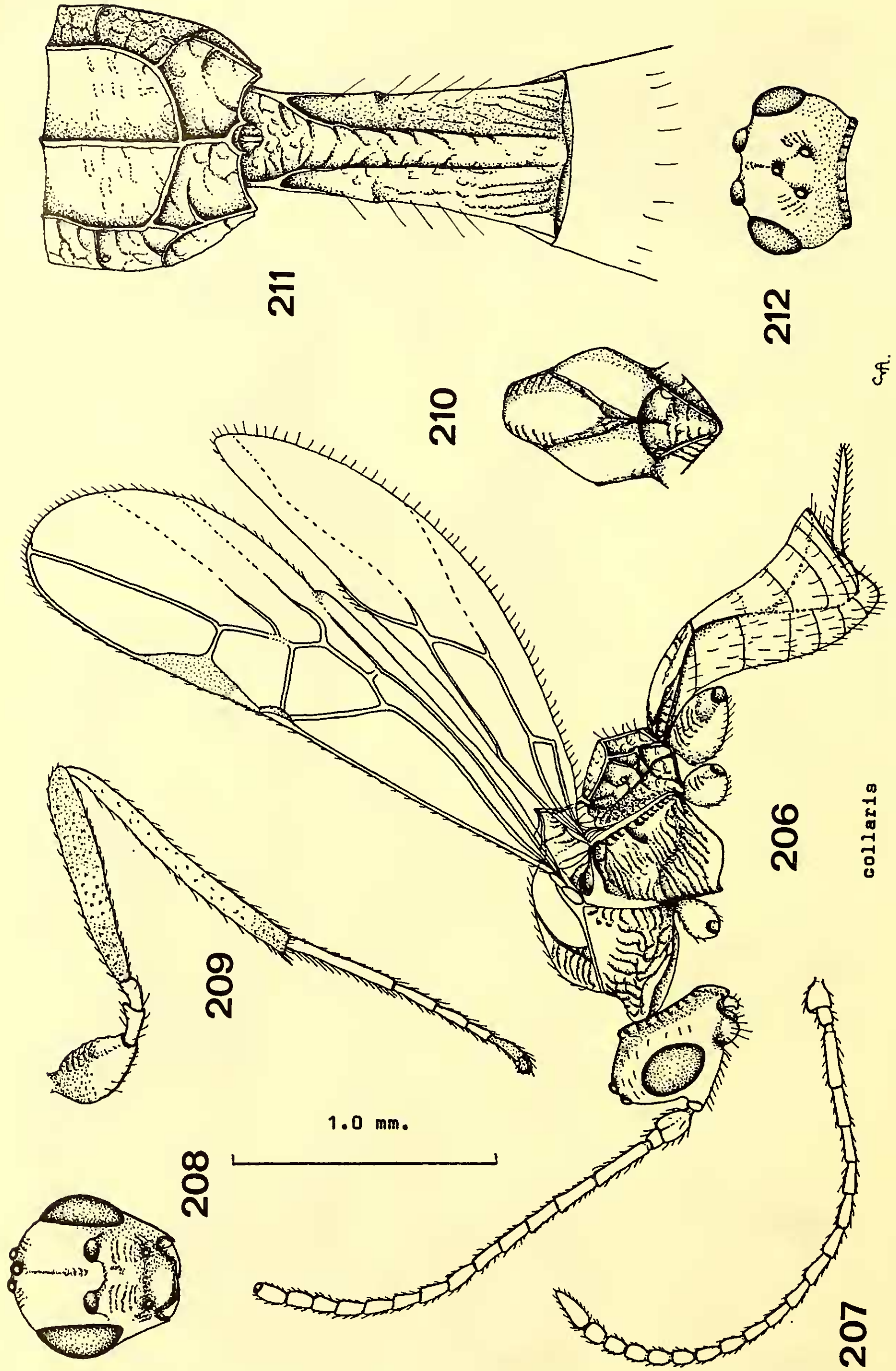

Fig. 206—212, *Blacus* (*Ganychorus*) *collaris* (Ashmead); 206, 208—212, Parke Reserve (Quebec); 207, ♀, Blacksburg (Virginia). 206, habitus, lateral aspect; 207, antenna, lateral aspect; 208, head, frontal aspect; 209, hind leg, lateral aspect; 210, mesonotum, dorsal aspect; 211, propodeum, 1st and 2nd tergites, dorsal aspect; 212, head, dorsal aspect. 206, 207, 209: scale-line; 208, 210, 212: 1.2 × scale-line; 211: 2.5 × scale-line

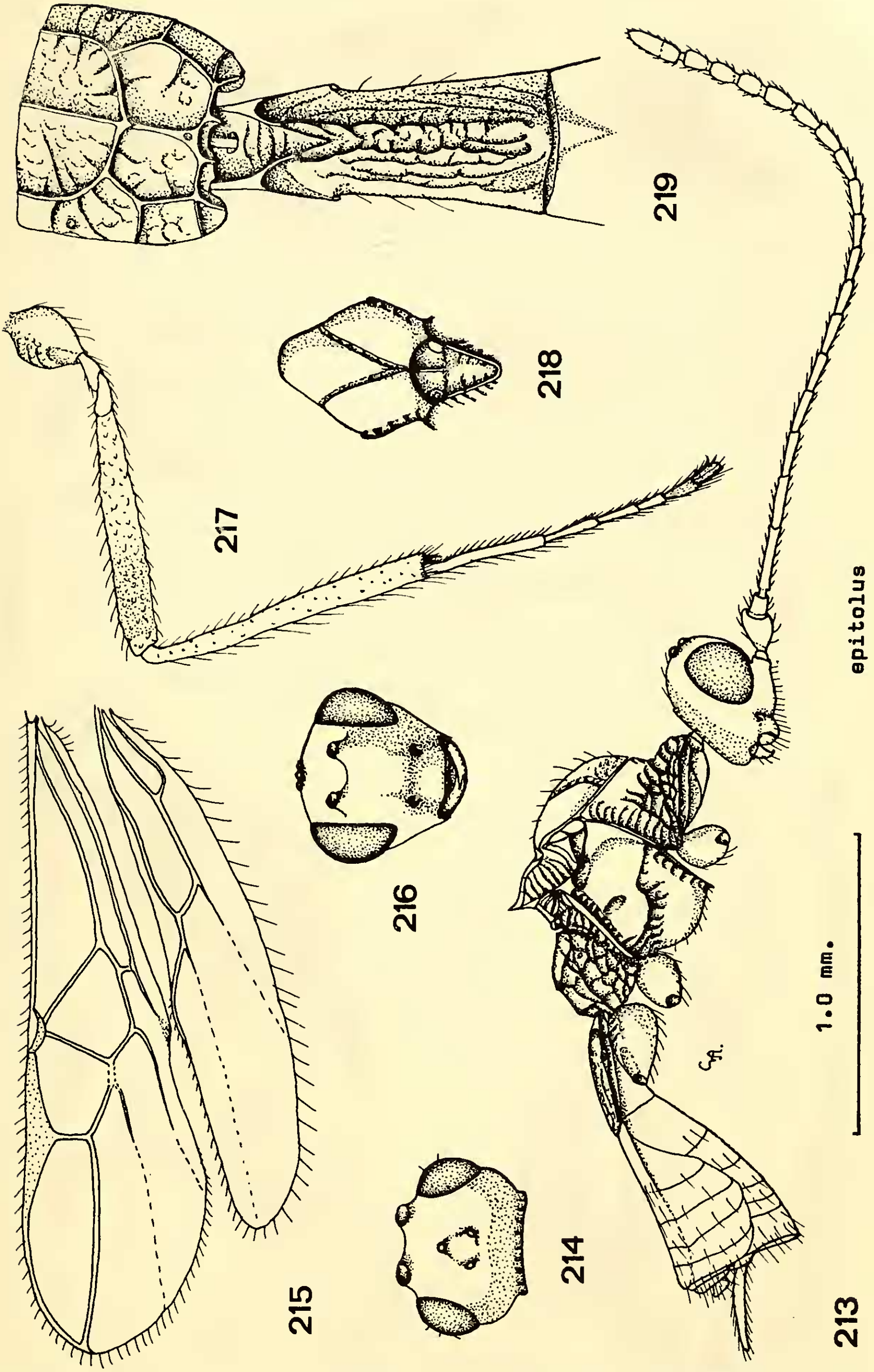

Fig. 213—219, *Blacus* (*Ganychorus*) *epitolus* spec. nov., holotype. 213, habitus, lateral aspect; 214, head, dorsal aspect; 215, wings; 216, head, frontal aspect; 217, hind leg, lateral aspect; 218, mesonotum, dorsal aspect; 219, propodeum and 1st tergite, dorsal aspect. 213, 215, 217: scale-line; 214, 216, 218: 1.2 × scale-line; 219: 2.5 × scale-line

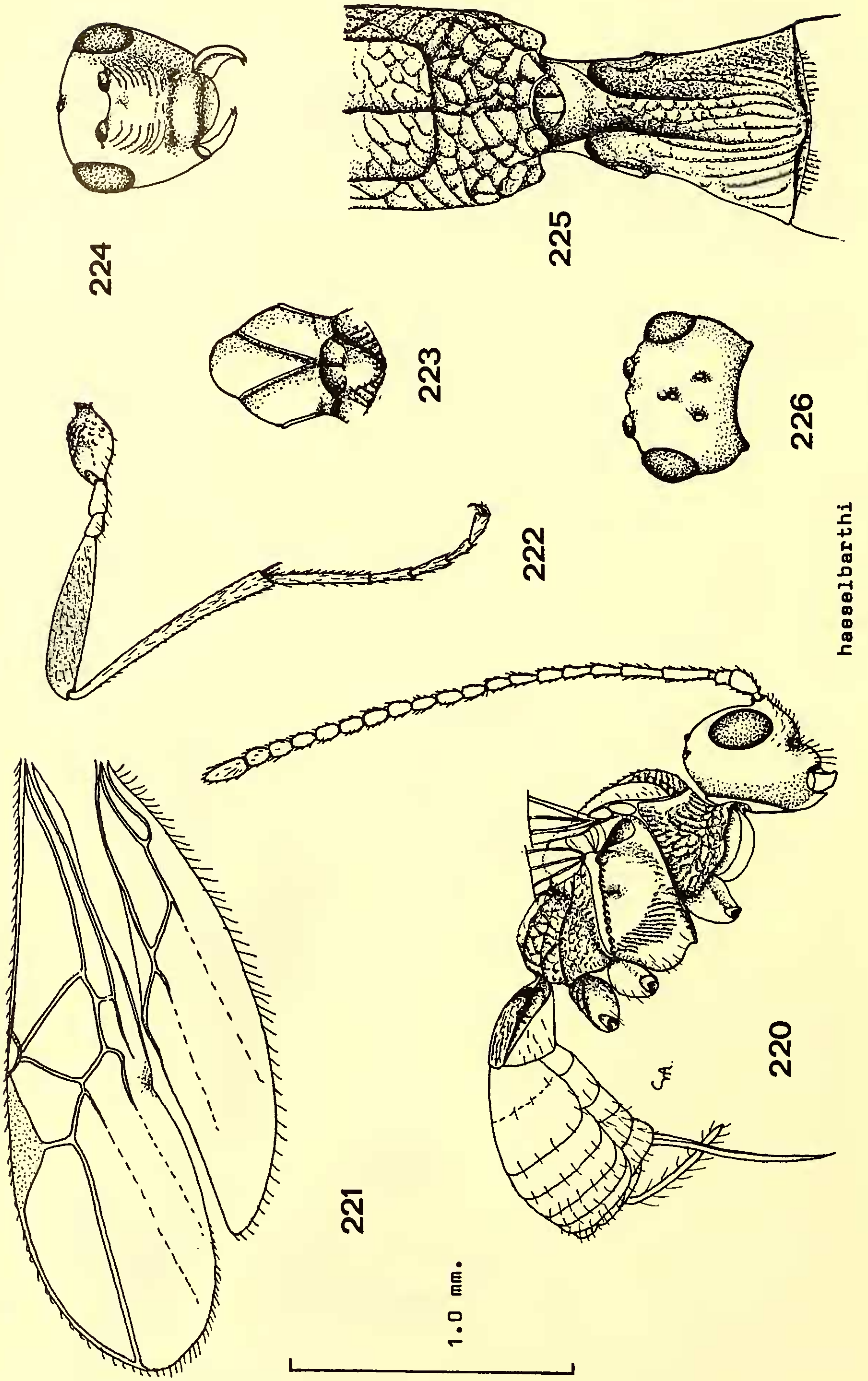

Fig. 220—226, *Blacus* (*Ganychorus*) *haeselbarthi* spec. nov., holotype. 220, habitus, lateral aspect; 221, wings (bent); 22, hind leg, lateral aspect; 223, mesonotum, dorsal aspect; 224, head, frontal aspect; 225, propodeum and 1st tergite, dorsal aspect; 226, head, dorsal aspect. 220, 222: scale-line; 223, 224, 226: 1.2 × scale-line; 225: 2.5 × scale-line

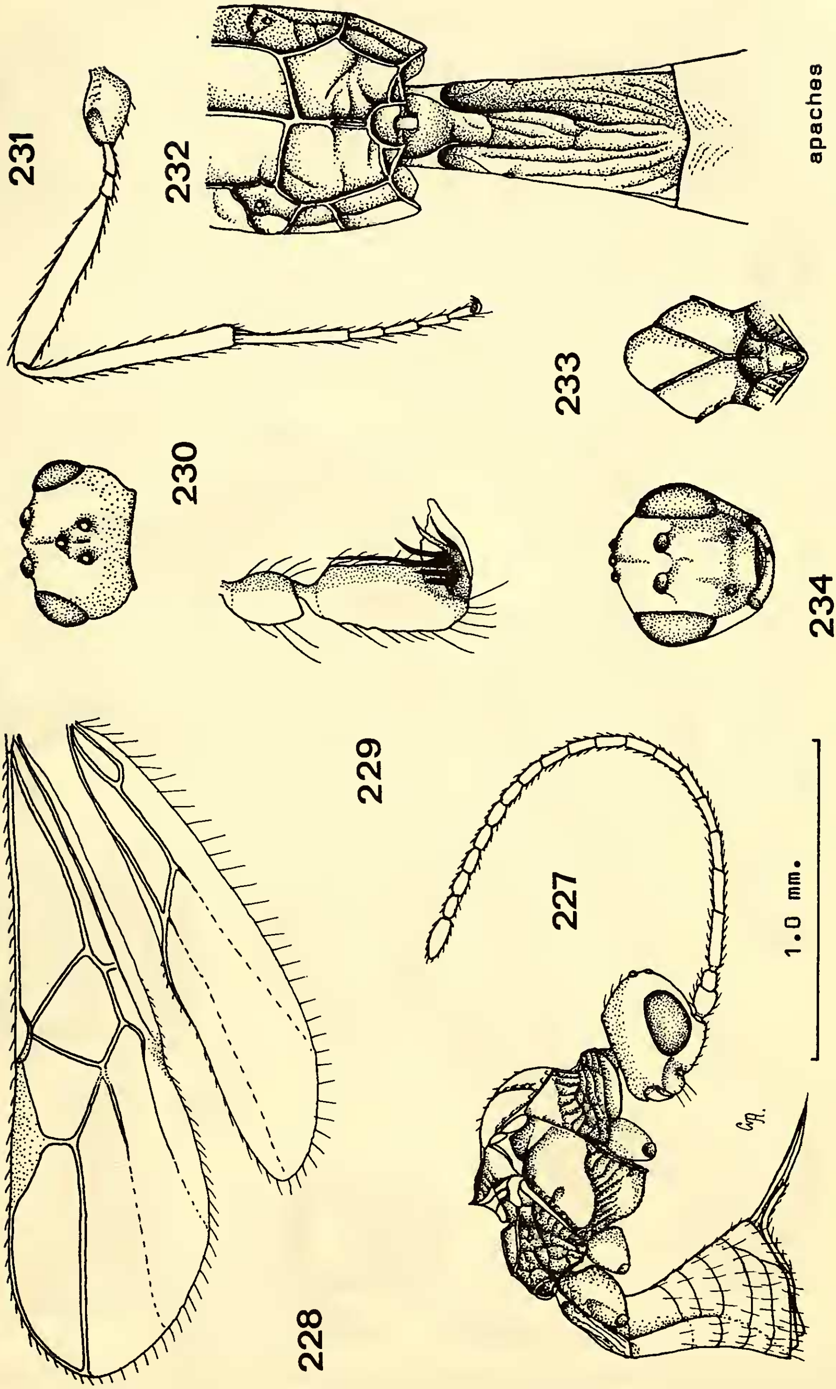

Fig. 227—234, *Blacus* (*Ganychorus*) *apaches* spec. nov., holotype. 227, habitus, lateral aspect; 228, wings; 229, middle tarsal claw, lateral aspect; 230, head, dorsal aspect; 231, hind leg, lateral aspect; 232, propodeum and 1st tergite, dorsal aspect; 233, mesonotum, dorsal aspect; 234, head, frontal aspect. 227, 228, 231: scale-line; 229: 5.0 × scale-line; 230, 233, 234: 1.2 × scale-line; 232: 2.5 × scale-line

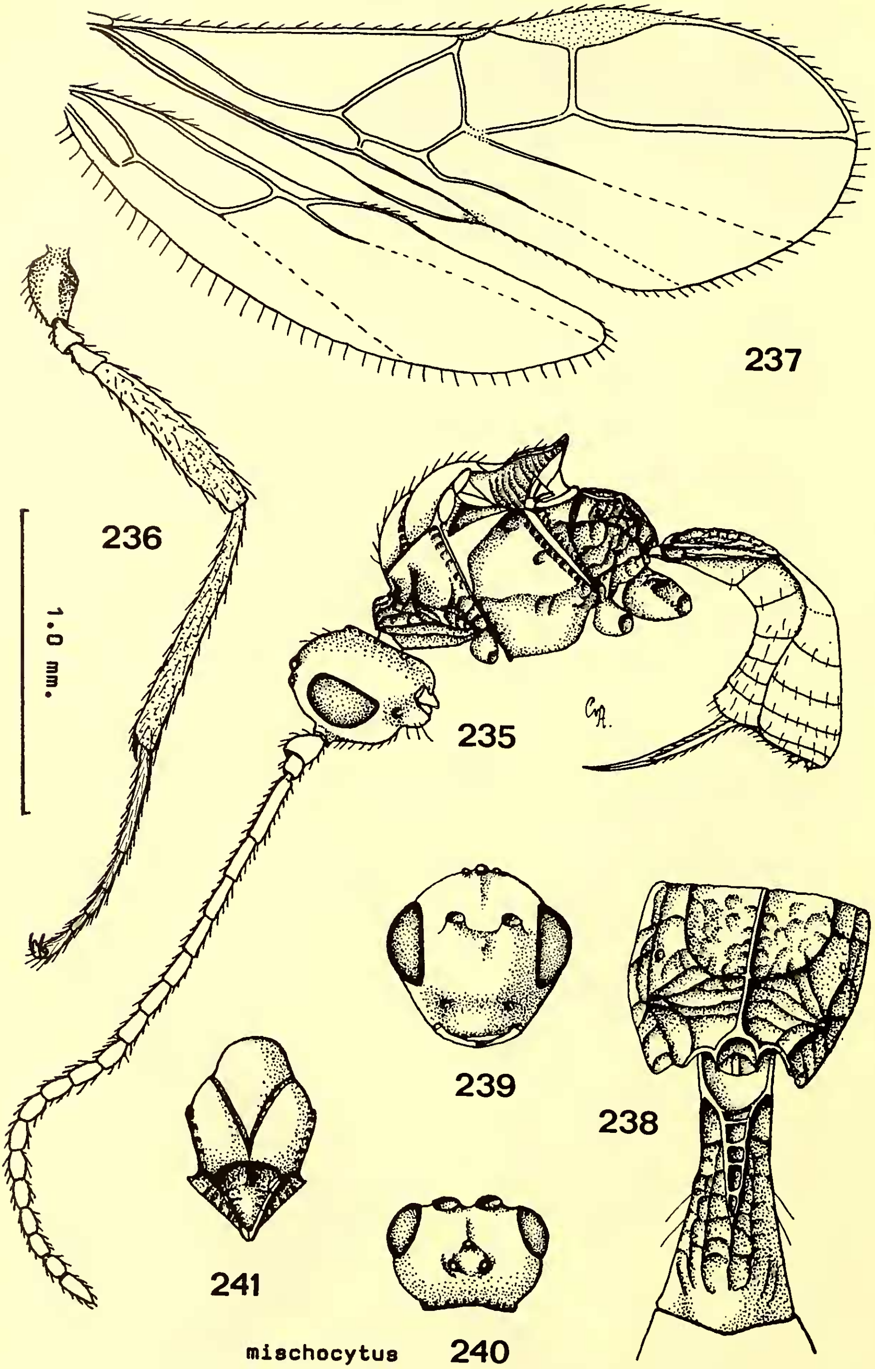

Fig. 235—241, *Blacus* (*Ganychorus*) *mischocytus* spec. nov.; 235—237, 239, holotype; 238, 240, 241, paratype. 235, habitus, lateral aspect; 236, hind leg, lateral aspect; 237, wings; 238, propodeum and 1st tergite, dorsal aspect; 239, head, frontal aspect; 240, head, dorsal aspect; 241, mesonotum, dorsal aspect. 235—237: scale-line; 238: 2.5 × scale-line; 239—241, 1.2 × scale-line

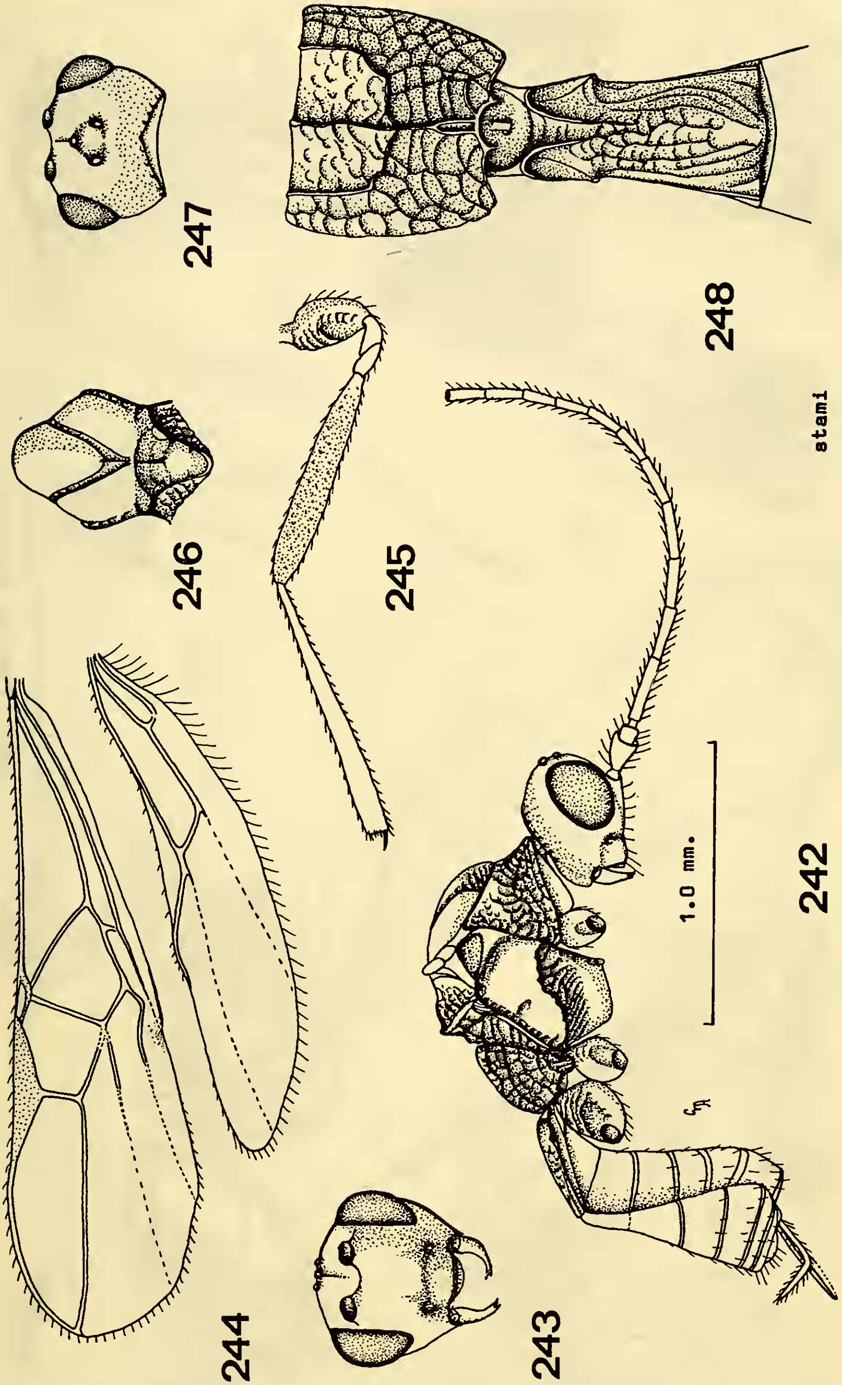

Fig. 242—248, *Blacus* (*Ganychorus*) *stami* spec. nov., holotype. 242, habitus, lateral aspect; 243, head, frontal aspect; 244, wings; 245, hind leg, lateral aspect; 246, mesonotum, dorsal aspect; 247, head, dorsal aspect; 248, propodeum and 1st tergite, dorsal aspect. 242, 244, 245: scale-line; 243, 246, 247: 1.2 × scale-line; 248: 2.5 × scale-line

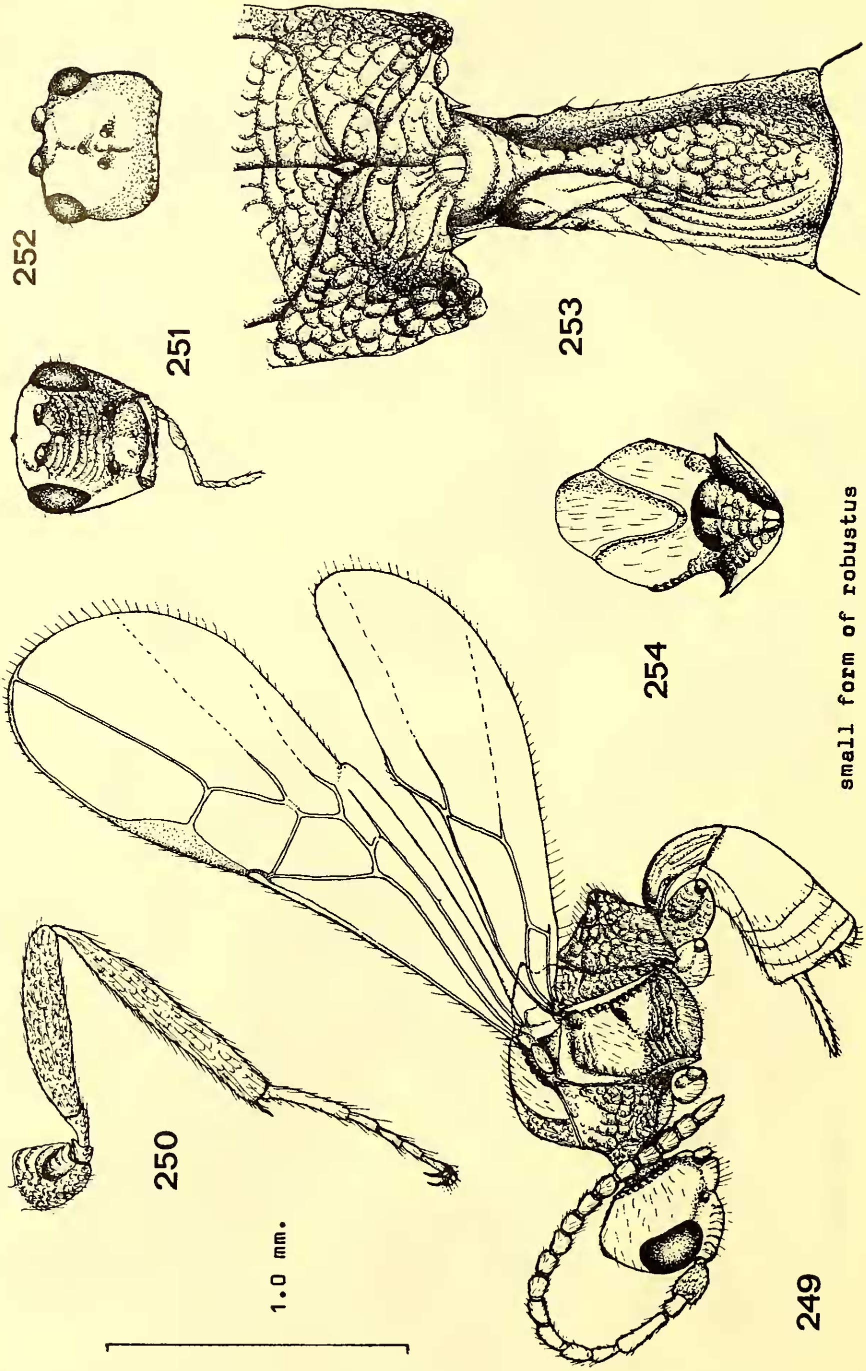

Fig. 249—254, *Blacus* (*Hysterobolus*) *robustus* Haeselbarth, Clingman's Dome (North Carolina). 249, habitus, lateral aspect; 250, hind leg, lateral aspect; 251, head, frontal aspect; 252, head, dorsal aspect; 253, propodeum and 1st tergite, dorsal aspect; 254, mesonotum, dorsal aspect. 249, 250: scale-line; 251, 252, 254: 1.2 × scale-line; 253: 3.0 × scale-line

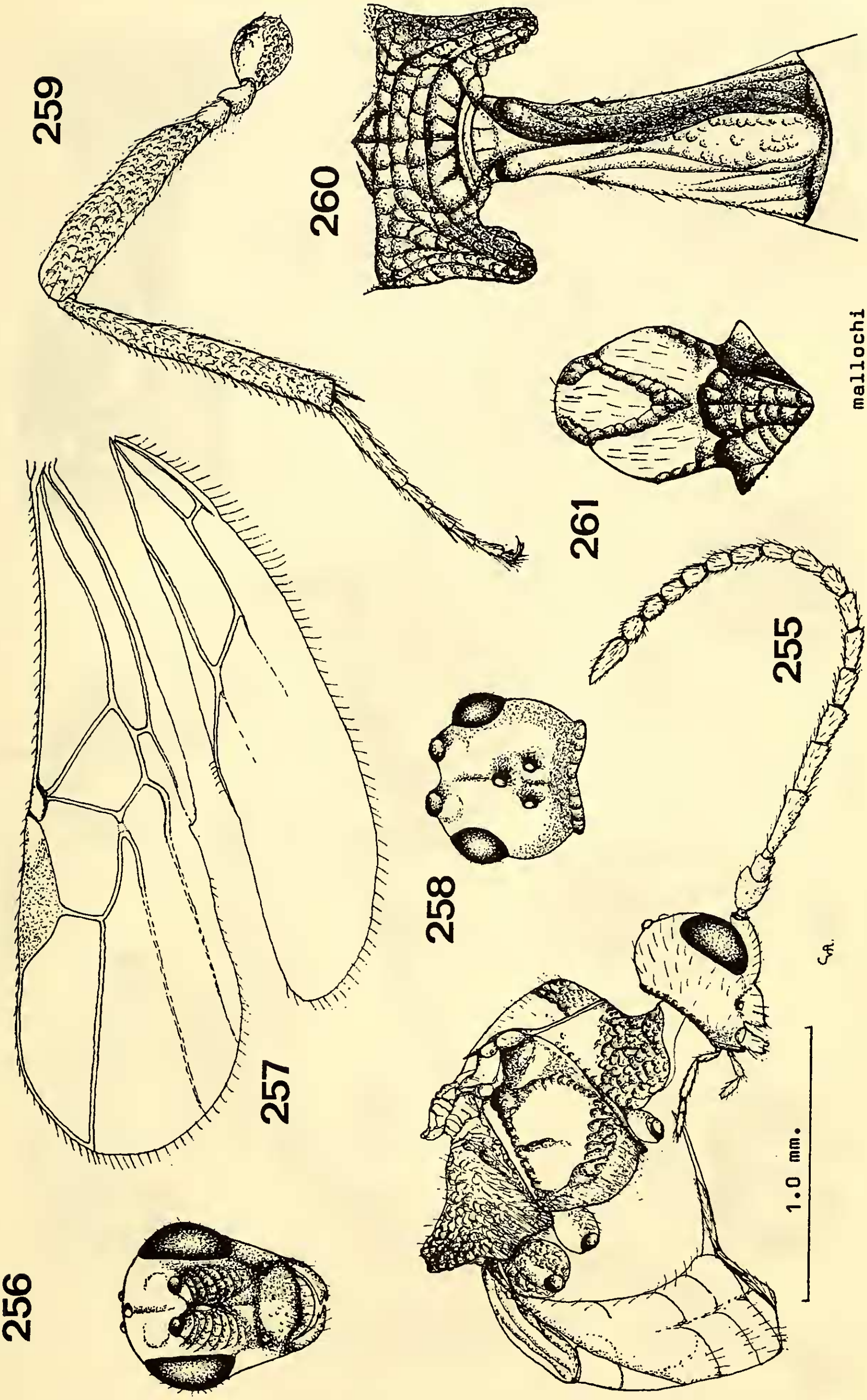

Fig. 255—261, *Blacus* (*Hysterobolus*) *mallochi* (Viereck), holotype. 255, habitus, lateral aspect; 256, head, frontal aspect; 257, wings; 258, head, dorsal aspect; 259, hind leg, lateral aspect; 260, propodeum (p.p.) and 1st tergite, dorsal aspect; 261, mesonotum, dorsal aspect. 255, 257, 259: scale-line; 256, 258, 261: 1.2 × scale-line; 260: 2.5 × scale-line

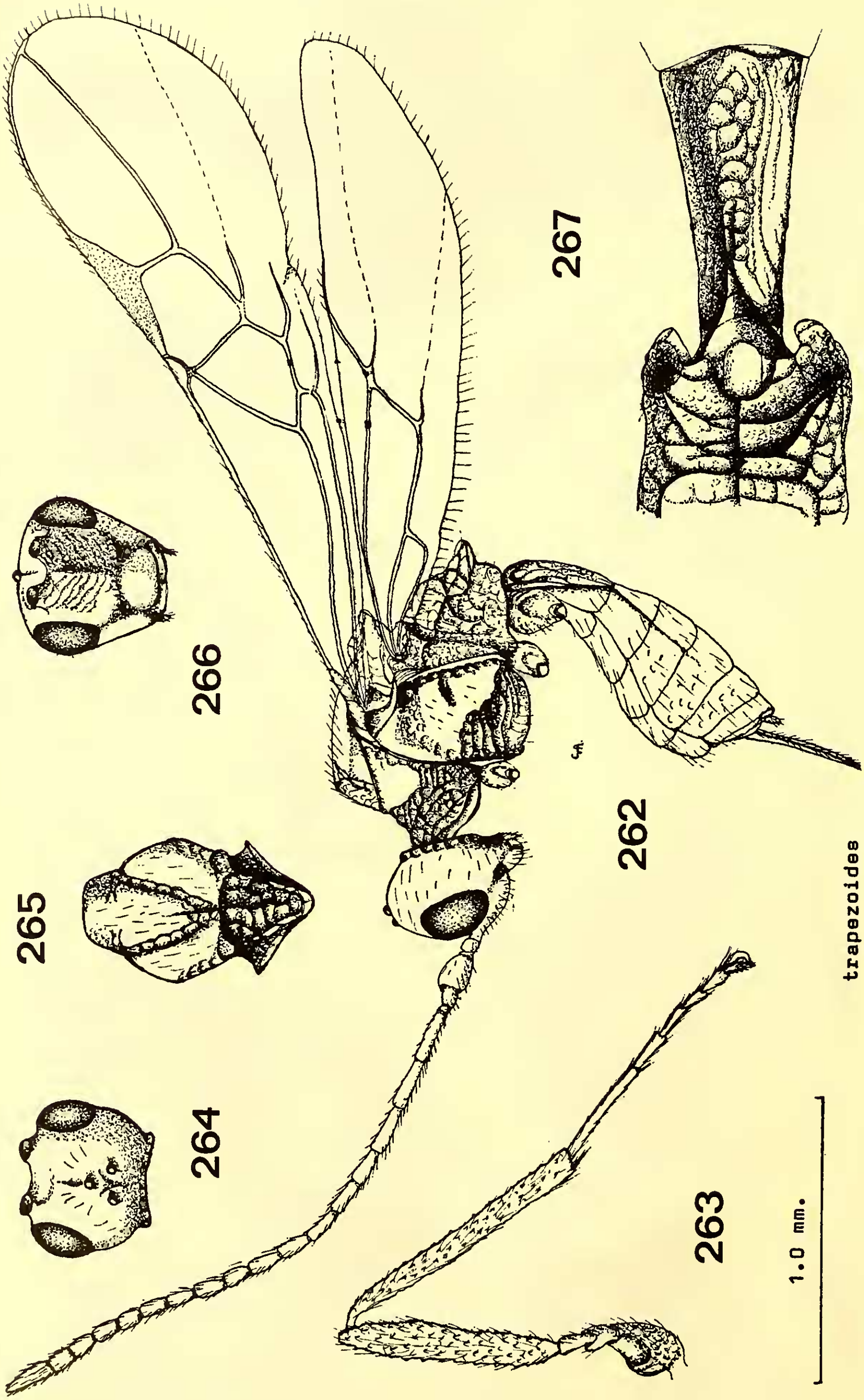

Fig. 262—267, *Blacus* (*Hysterobolus*) *trapezoides* spec. nov., holotype. 262, habitus, lateral aspect; 263, hind leg, lateral aspect; 264, head, dorsal aspect; 265, mesonotum, dorsal aspect; 266, head, frontal aspect; 267, propodeum and 1st tergite, dorsal aspect. 262, 263: scale-line; 264—266: 1.2 × scale-line; 267: 2.5 × scale-line

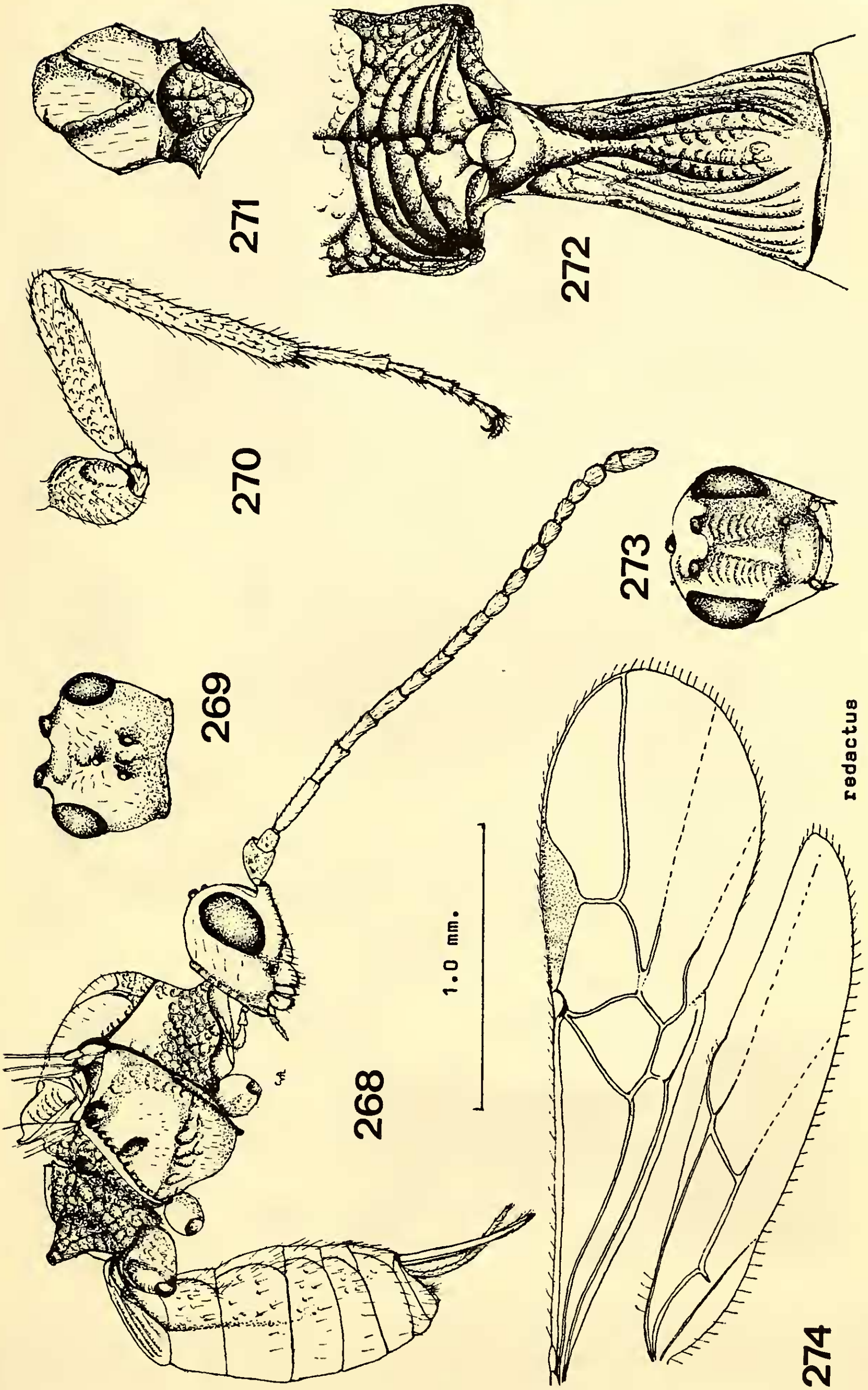

Fig. 268-274, *Blacus* (*Hysterobolus*) *redactus* spec. nov., holotype. 268, habitus, lateral aspect; 269, head, dorsal aspect; 270, hind leg, lateral aspect; 271, mesonotum, dorsal aspect; 272, propodeum adn 1st tergite, dorsal aspect; 273, head, frontal aspect; 274, wings. 268, 270, 274: scale-line; 269, 271, 273: 1.2 × scale-line; 272: 2.5 × scale-line

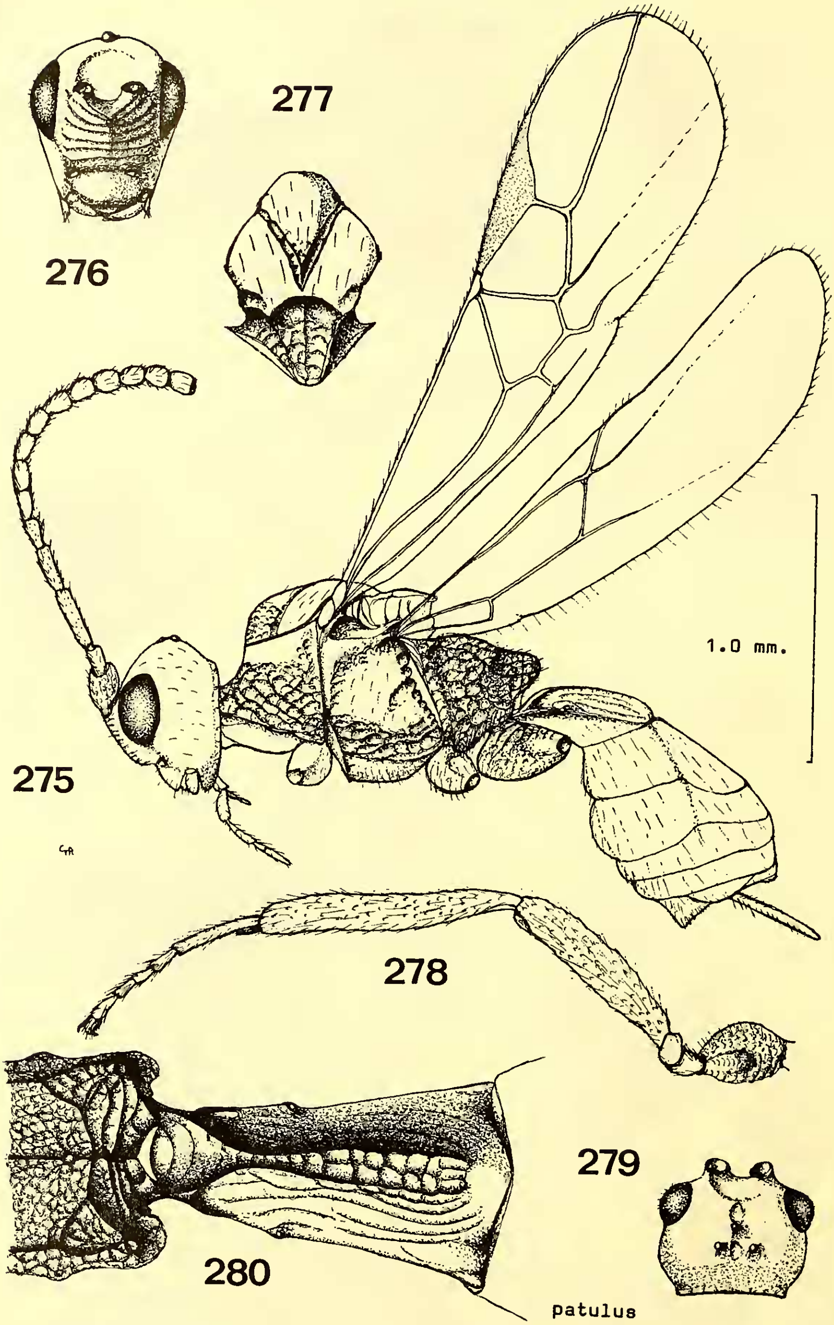

Fig. 275—280, *Blacus* (*Hysterobolus*) *patulus* spec. nov., holotype. 275, habitus, lateral aspect; 276, head, frontal aspect; 277, mesonotum, dorsal aspect; 278, hind leg, lateral aspect; 279, head, dorsal aspect; 280, propodeum and 1st tergite, dorsal aspect. 275, 278: scale-line; 276, 277, 279: 1.2 × scale-line; 280: 2.5 × scale-line

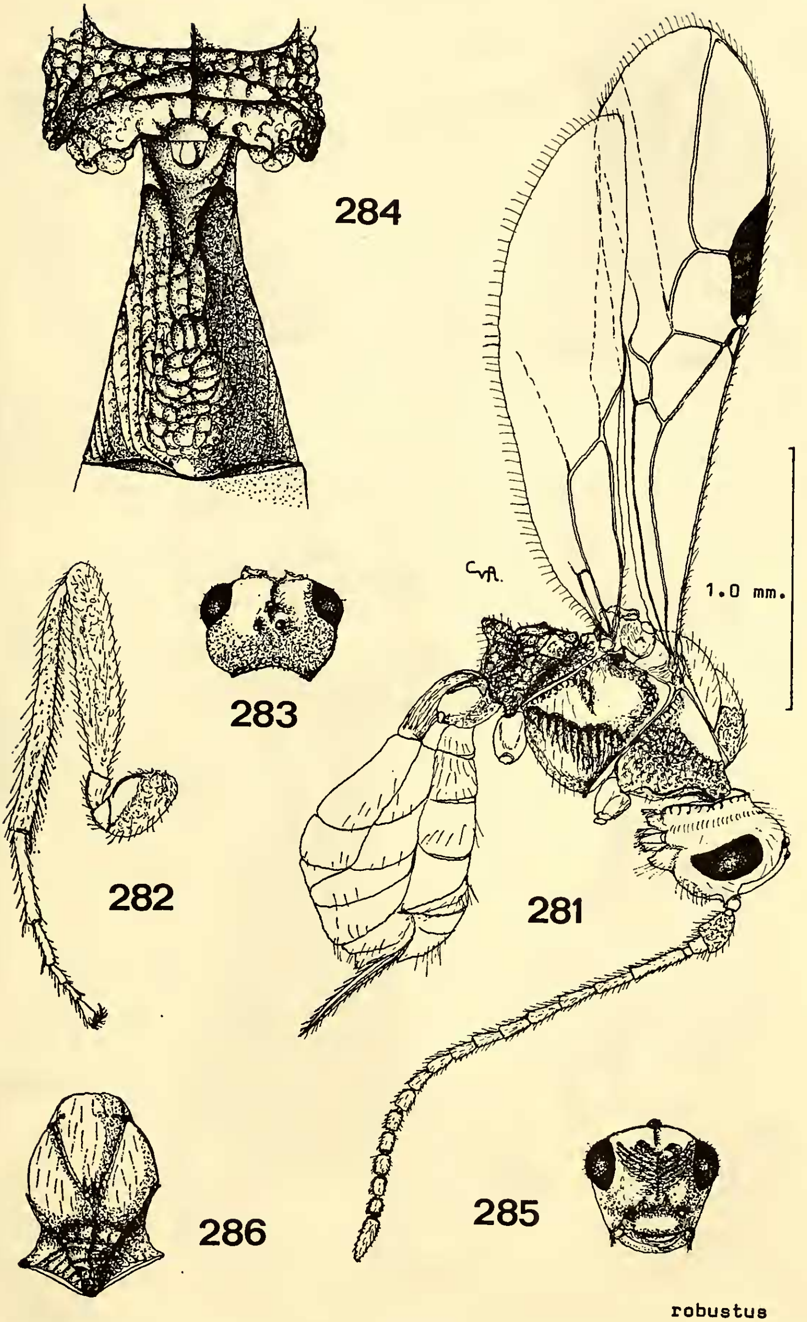

Fig. 281—286, *Blacus* (*Hysterobolus*) *robustus* Haeselbarth, Rustlers Park (Arizona). 281, habitus, lateral aspect; 282, hind leg, lateral aspect; 283, head, dorsal aspect; 284, propodeum (p.p.) and 1st tergite, dorsal aspect; 285, head, frontal aspect; 286, mesonotum, dorsal aspect. 281—283, 285—286: scale-line; 284: 2.5 × scale-line

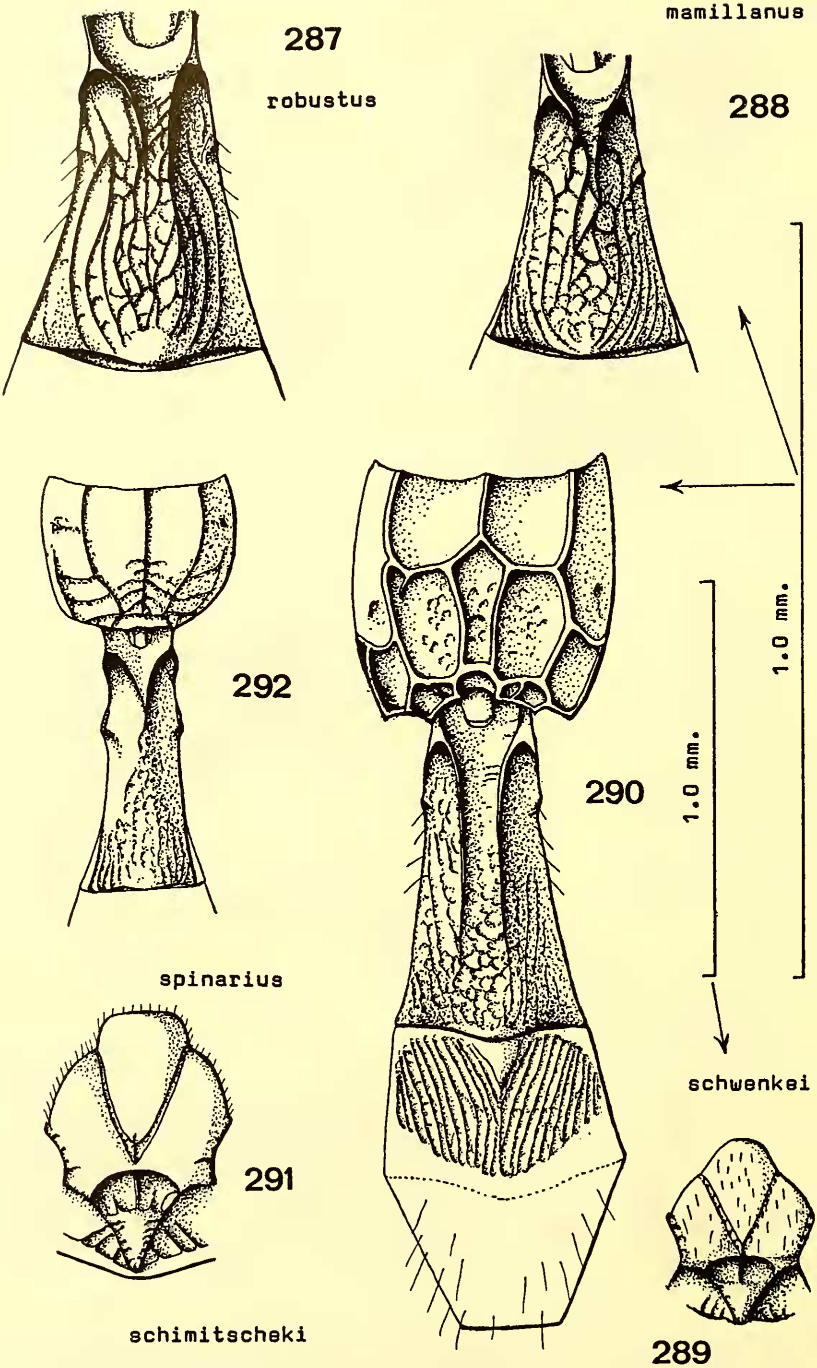

Fig. 287—292. 287, *Blacus* (*Hysterobolus*) *robustus* Haeselbarth, ♀, paratype, 1st tergite, dorsal aspect; 288, *Blacus* (*H.*) *mamillanus* Ruthe, ♀, Fürstenberg i. M. (Germany), 1st tergite, dorsal aspect; 289, 290, *Blacus* (*Tarpheion*) *schwenkei* Haeselbarth, ♀, paratype; 289, mesonotum, dorsal aspect; 290, propodeum, 1st-3rd tergites; 291, *Blacus* (*T.*) *schimitscheki* Haeselbarth, ♀, paratype, mesonotum, dorsal aspect; 292, *Artocrus spinarius* spec. nov., holotype, propodeum and 1st tergite, dorsal aspect. 287, 288, 290: long scale-line; 289, 291, 292: short scale-line

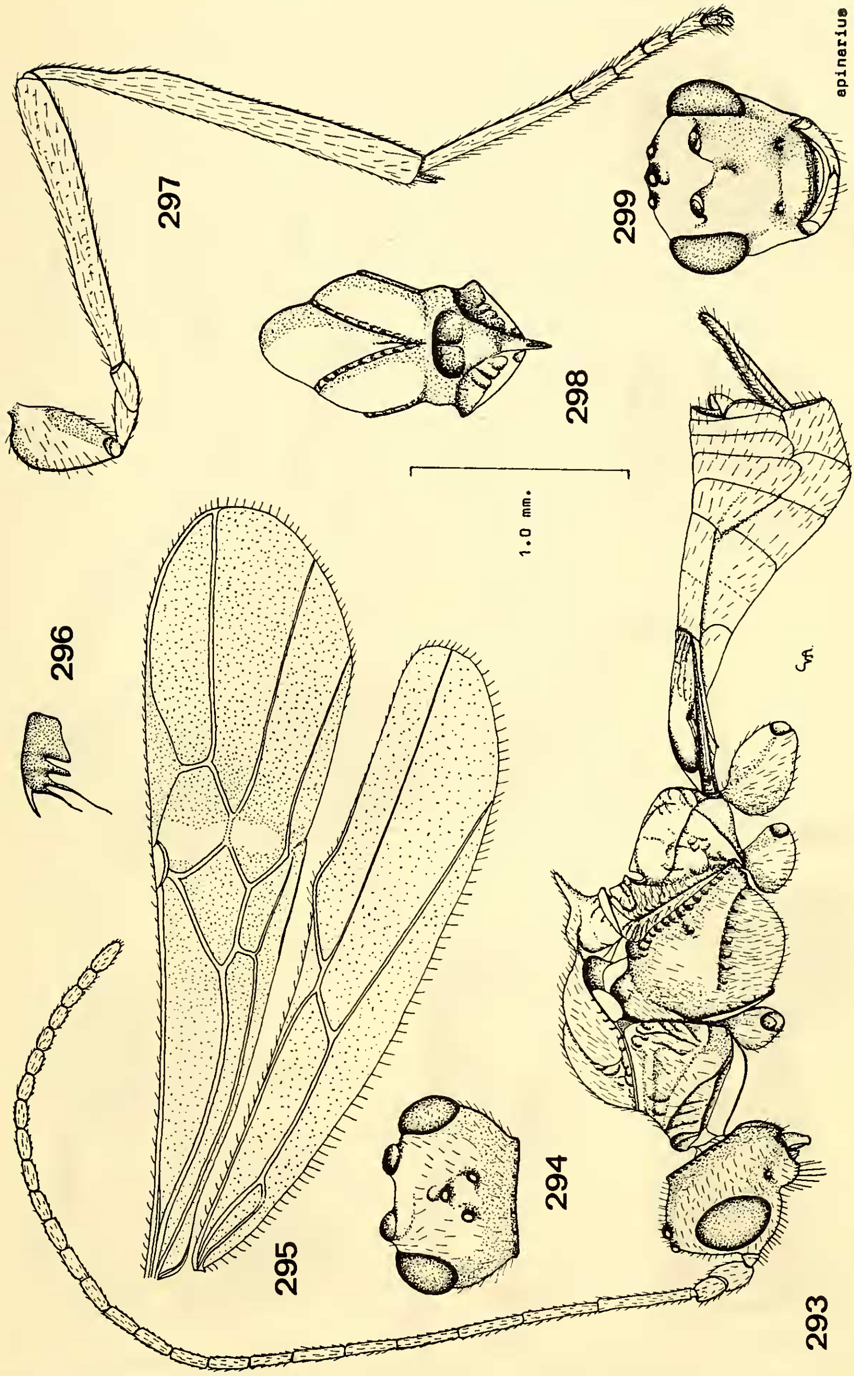

Fig. 293—299, *Artocrus spinarius* spec. nov., holotype. 293, habitus, lateral aspect; 294, head, dorsal aspect; 295, wings; 296, fore tarsal claw, lateral aspect; 297, hind leg, lateral aspect; 298, mesonotum, dorsal aspect; 299, head, frontal aspect. 293, 295, 297: scale-line; 294, 298, 299: 1.2 × scale-line; 296: 5.0 × scale-line

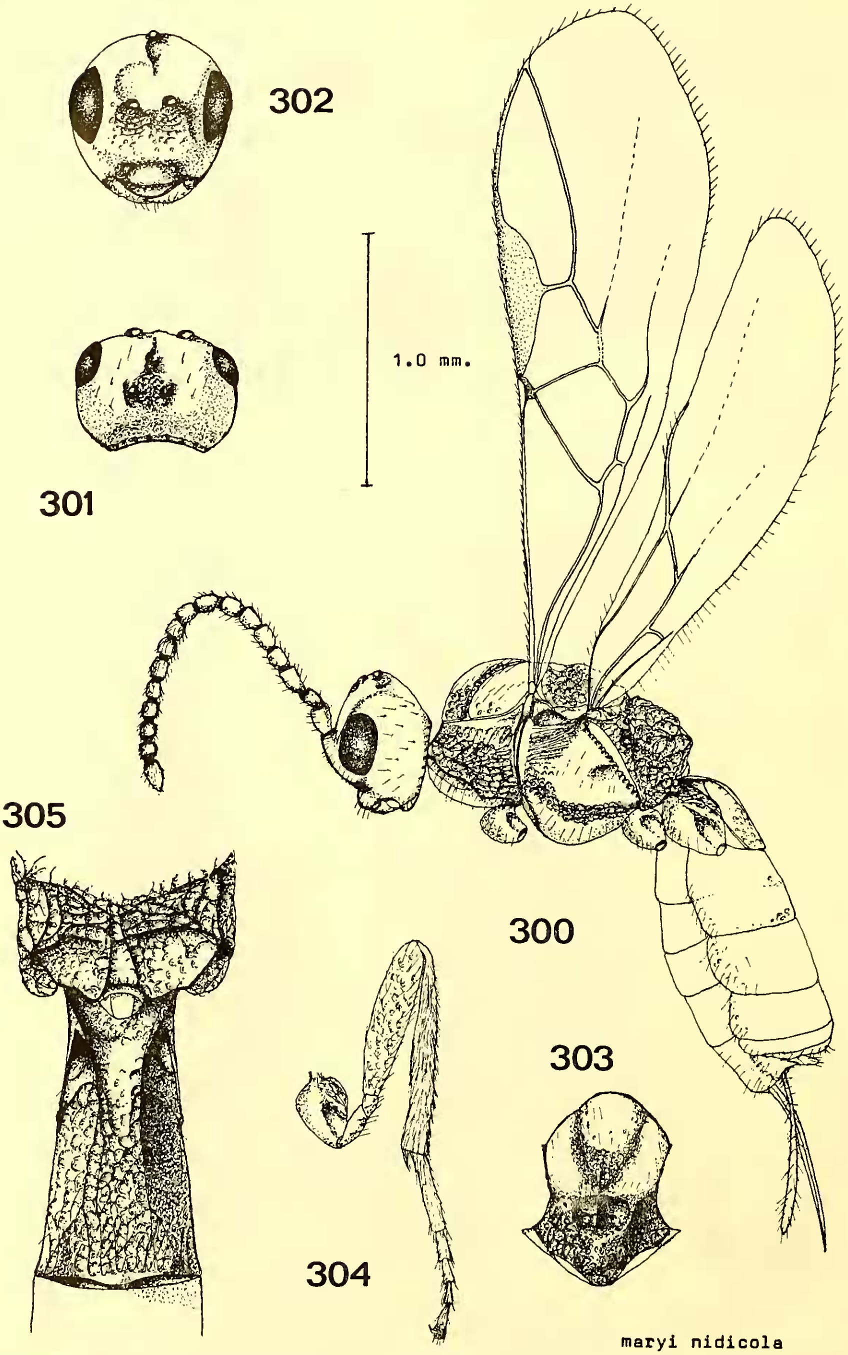

Fig. 300—305, *Blacus* (*Blacus*) *maryi* f. *nidicola* Hedqvist, Yukon Territory (Canada). 300, habitus, lateral aspect; 301, head, dorsal aspect; 302, head, frontal aspect; 303, mesonotum, dorsal aspect; 304, hind leg, lateral aspect; 305, propodeum (p.p.) and 1st tergite, dorsal aspect. 300, 304: scale-line; 301—303: 1.2 × scale-line; 305: 2.5 × scale-line

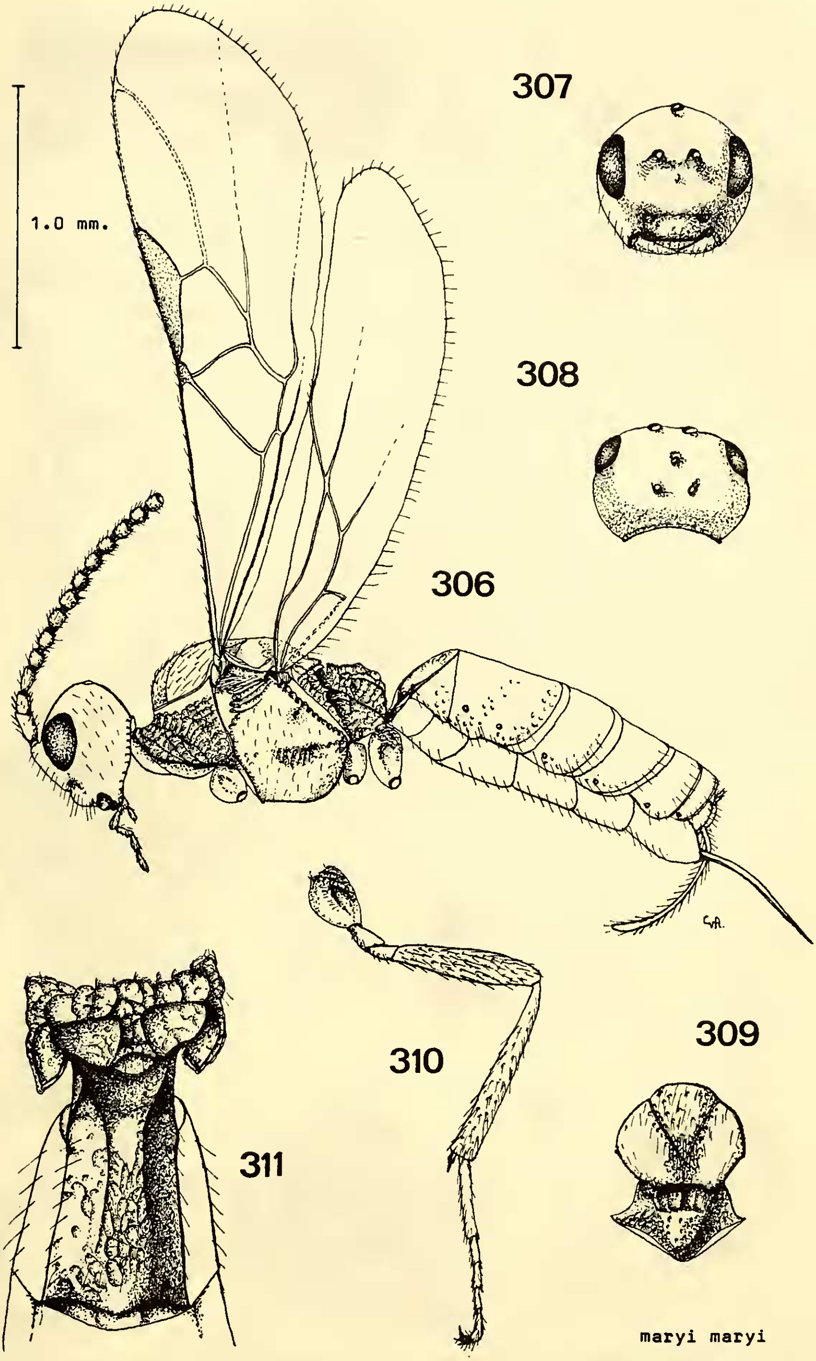

Fig. 306—311, *Blacus* (*Blacus*) *maryi* Hellén, Pete Lake (British Columbia). 306, habitus, lateral aspect; 307, head, frontal aspect; 308, head, dorsal aspect; 309, mesonotum, dorsal aspect; 310, hind leg, lateral aspect; 311, propodeum (p.p.) and 1st tergite, dorsal aspect. 306, 310: scale-line; 307—309: 1.2 × scale-line; 311: 2.5 × scale-line

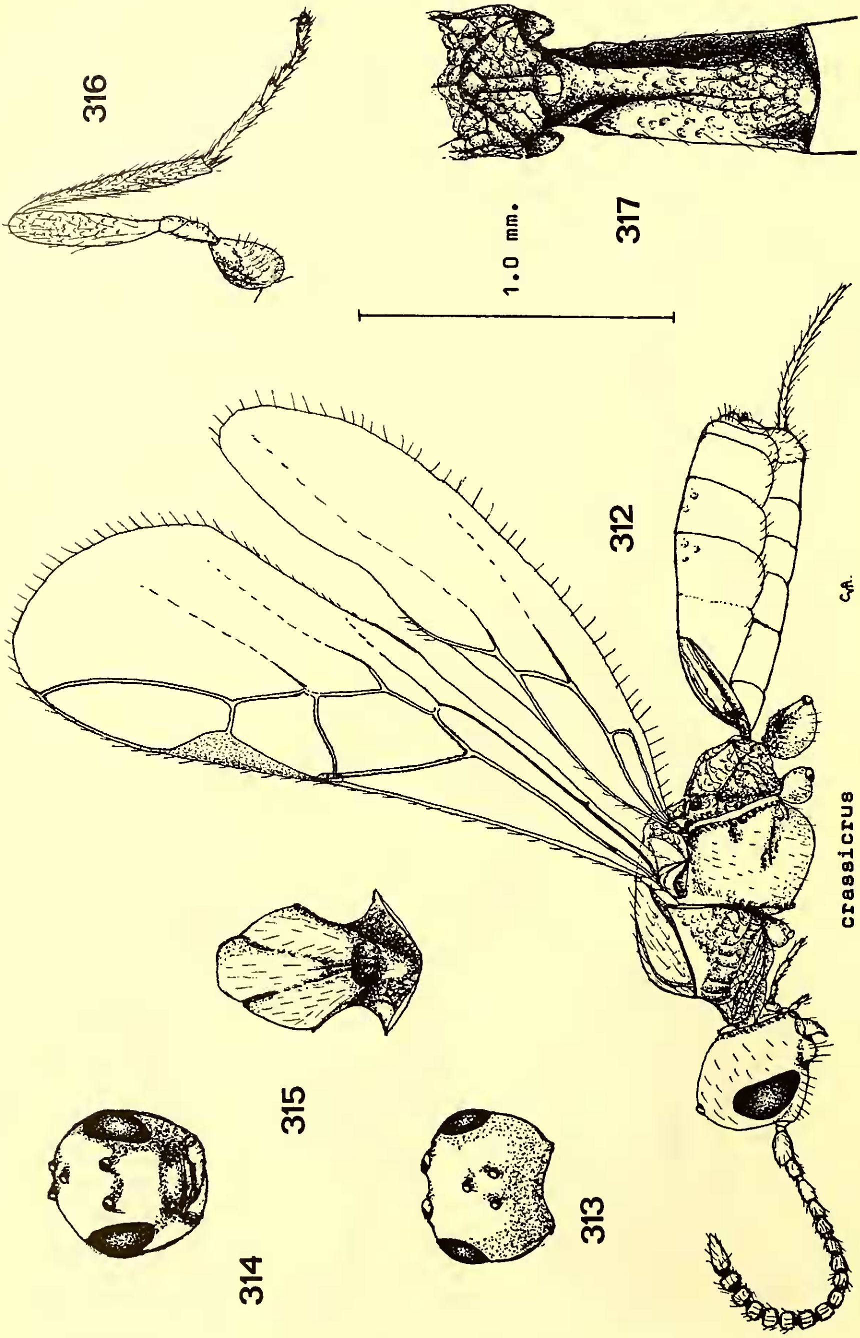

Fig. 312—317, *Blacus* (*Blacus*) *crassicrus* spec. nov., holotype. 312, habitus, lateral aspect; 313, head, dorsal aspect; 314, head, frontal aspect; 315, mesonotum, dorsal aspect; 316, hind leg, lateral aspect; 317, propodeum and 1st tergite, dorsal aspect. 312, 316: scale-line; 313—315: 1.2 × scale-line; 317: 2.5 × scale-line

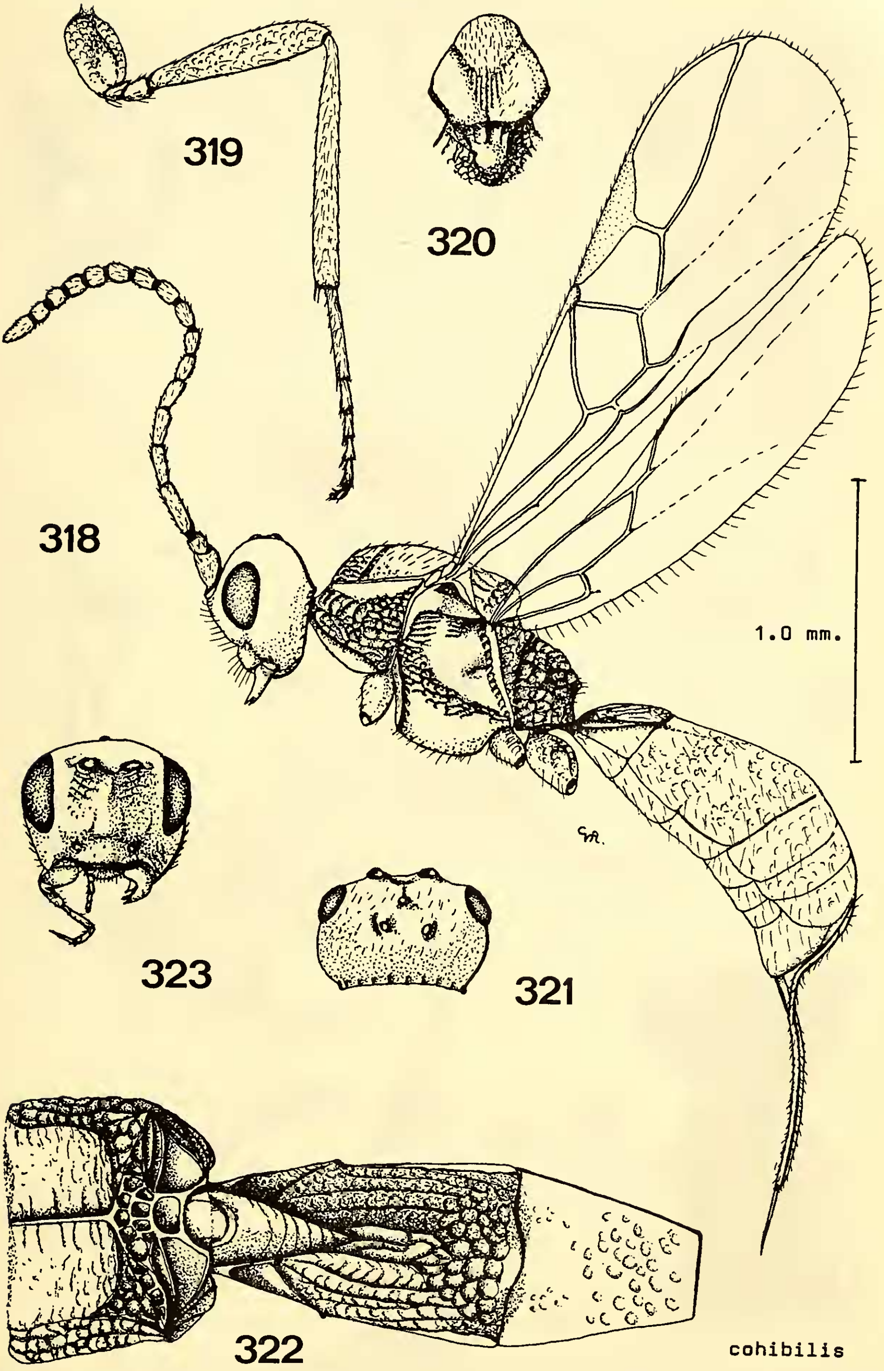

Fig. 318—323, *Blacus* (*Blacus*) *cohibilis* spec. nov., holotype. 318, habitus, lateral aspect; 319, hind leg, lateral aspect; 320, mesonotum, dorsal aspect; 321, head, dorsal aspect; 322, propodeum, 1st and 2nd tergites, dorsal aspect; 323, head, frontal aspect. 318—321, 323: scale-line: 322: 2.5 × scale-line

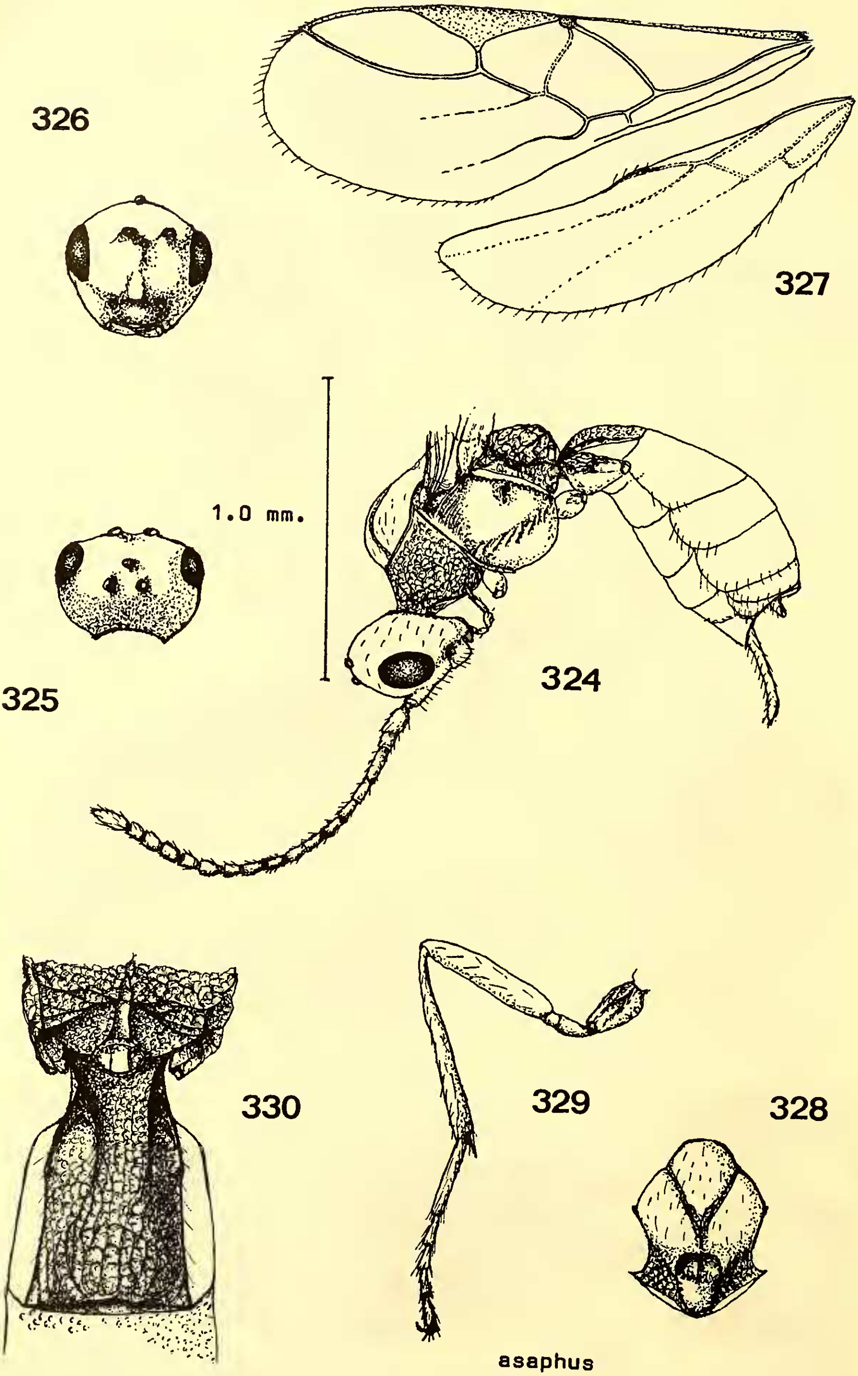

Fig. 324—330, *Blacus* (*Blacus*) *asaphus* spec. nov., holotype. 324, habitus, lateral aspect; 325, head, dorsal aspect; 327, wings; 328, mesonotum, dorsal aspect; 329, hind leg, lateral aspect; 330, propodeum (p.p.) and 1st tergite, dorsal aspect. 324, 327, 329: scale-line; 325, 326, 328: 1.2 × scale-line; 330: 2.5 × scale-line

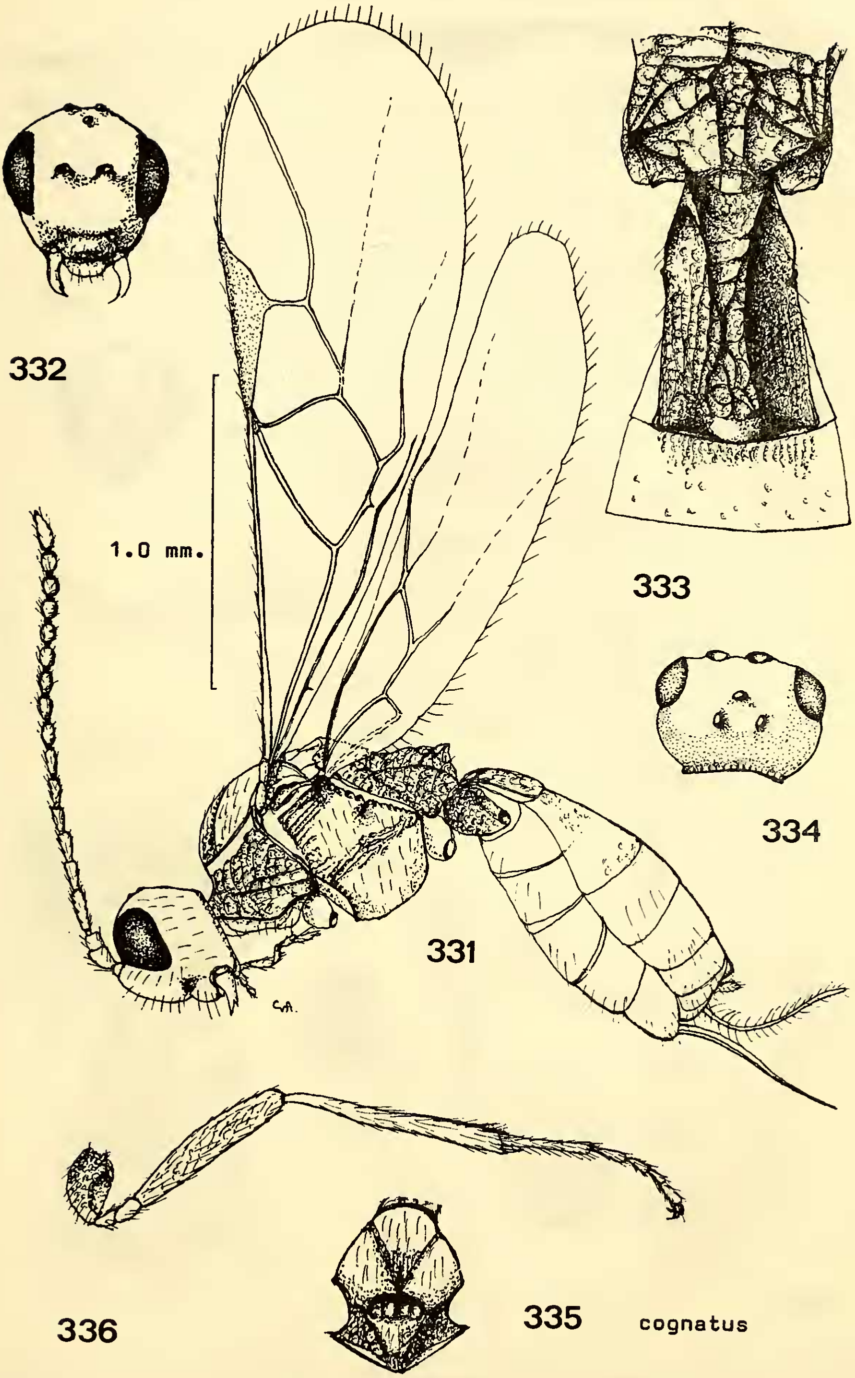

Fig. 331—336, *Blacus* (*Blacus*) *cognatus* spec. nov., holotype. 331, habitus, lateral aspect; 332, head, frontal aspect; 333, propodeum (p.p.), 1st and 2nd tergites, dorsal aspect; 334, head, dorsal aspect; 335, mesonotum, dorsal aspect; 336, hind leg, lateral aspect. 331, 336: scale-line; 332, 334, 335: 1.2 × scale-line; 333: 2.5 × scale-line

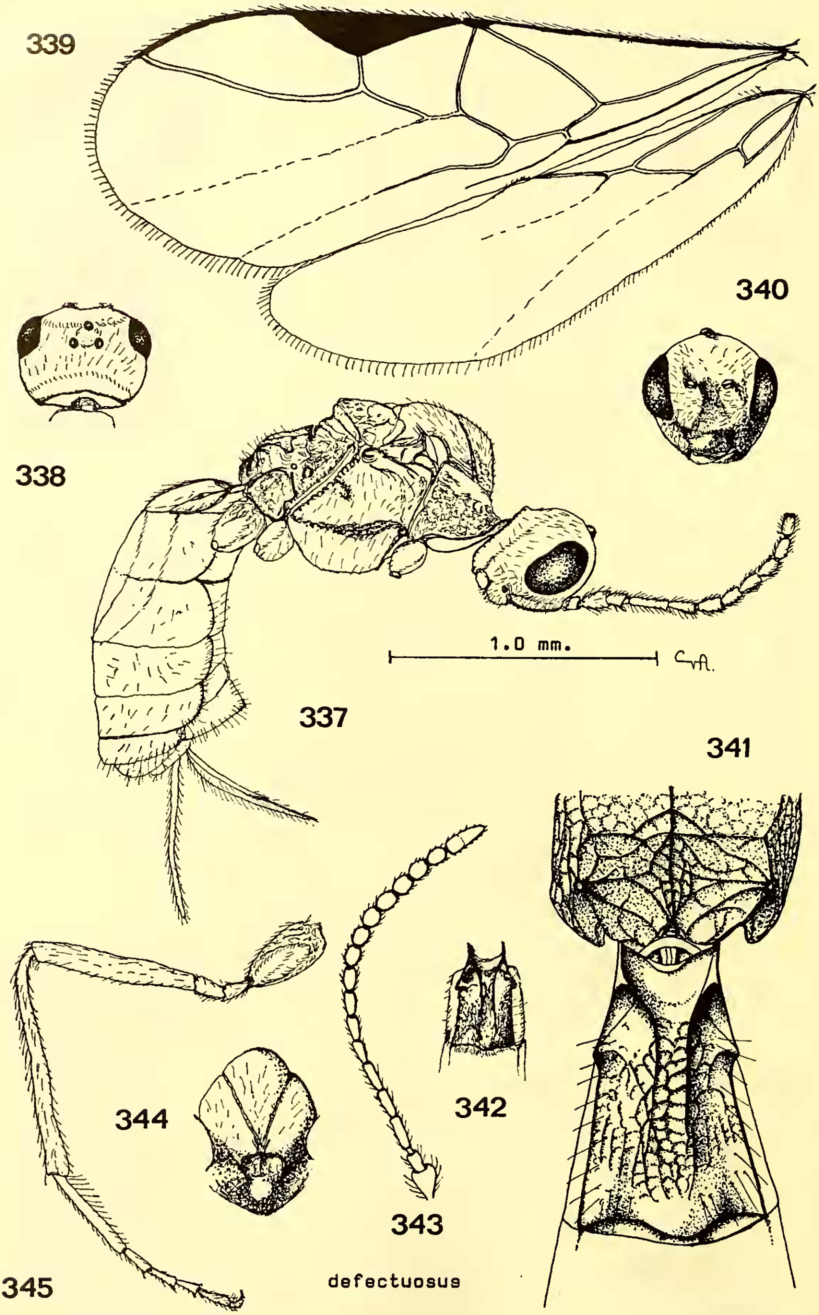

Fig. 337—345, *Blacus* (*Blacus*) *defectuosus* Provancher; 337—340, 342, 344, 345, holotype; 341, 343 after females from Sasketoon (Saskatchewan). 337, habitus, lateral aspect; 338, head, dorsal aspect; 339, wings; 340, head, frontal aspect; 341, propodeum and 1st tergite, dorsal aspect; 342, 1st tergite, dorsal aspect; 343, antenna, lateral aspect; 344, mesonotum, dorsal aspect; 345, hind leg, lateral aspect. 337—340, 342—345: scale-line; 341: 2.5 × scale-line

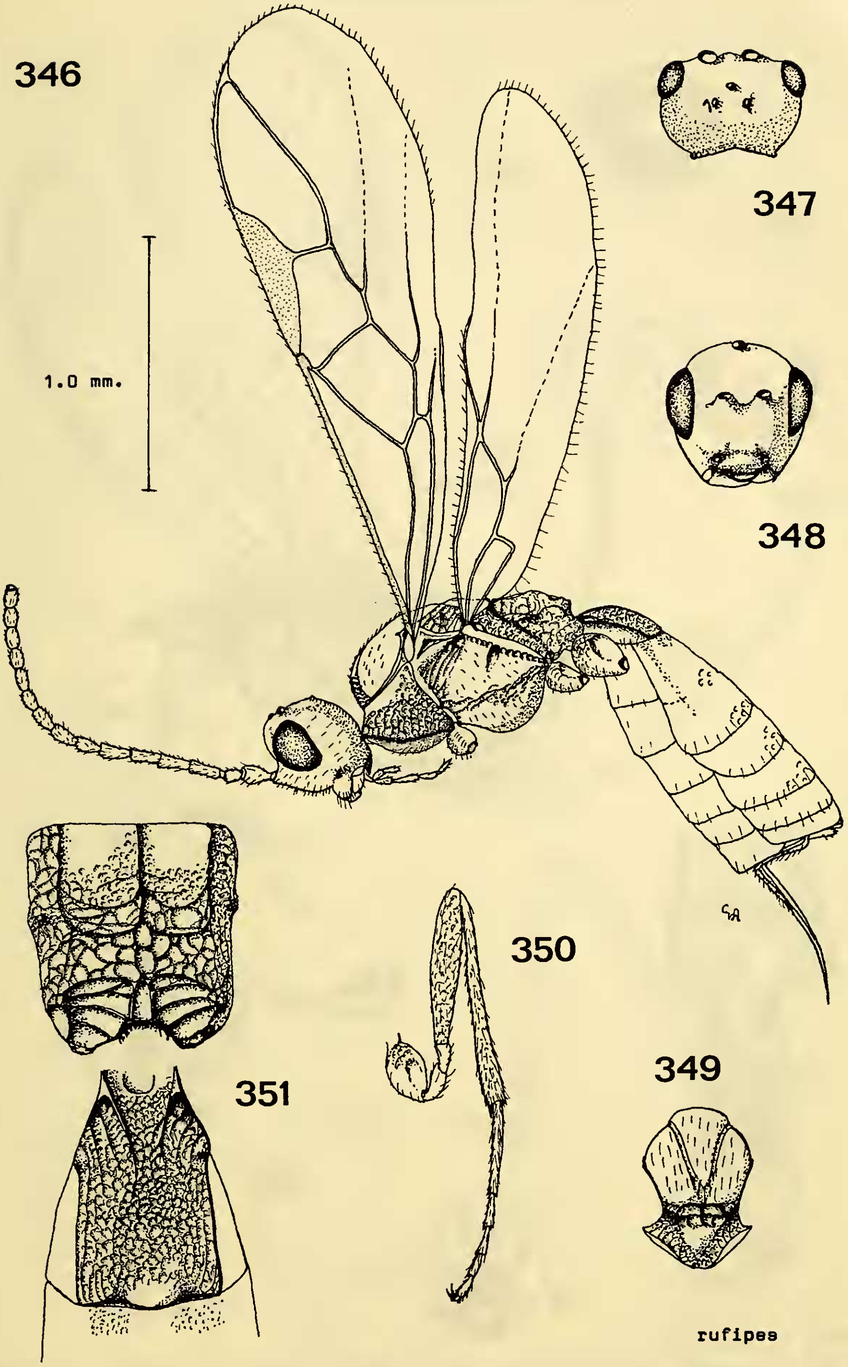

Fig. 346—351, *Blacus* (*Blacus*) *rufipes* (Ashmead), Swift Current (Saskatchewan). 346, habitus, lateral aspect; 347, head, dorsal aspect; 348, head, frontal aspect; 349, mesonotum, dorsal aspect; 350, hind leg, lateral aspect; 351, propodeum and 1st tergite, dorsal aspect. 346, 350: scale-line; 347—349: 1.2 × scale-line; 351: 2.5 × scale-line

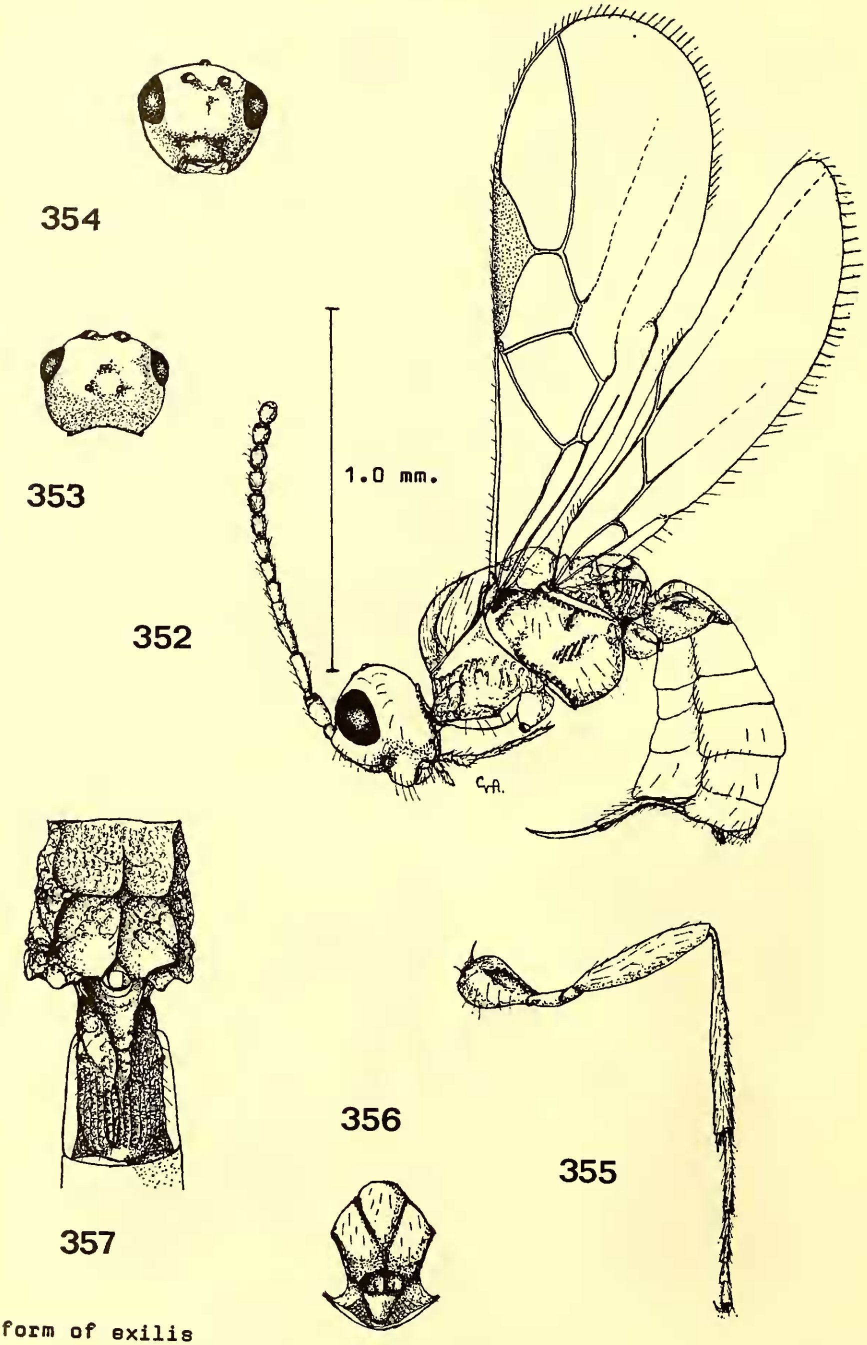

Fig. 352—357, *Blacus* (*Blacus*) *exilis* (Nees), Payne Bay (Quebec). 352, habitus, lateral aspect; 353, head, dorsal aspect; 354, head, frontal aspect; 355, hind leg, lateral aspect; 356, mesonotum, dorsal aspect; 357, propodeum and 1st tergite, dorsal aspect. 352—356: scale-line; 357: 2.1 × scale-line

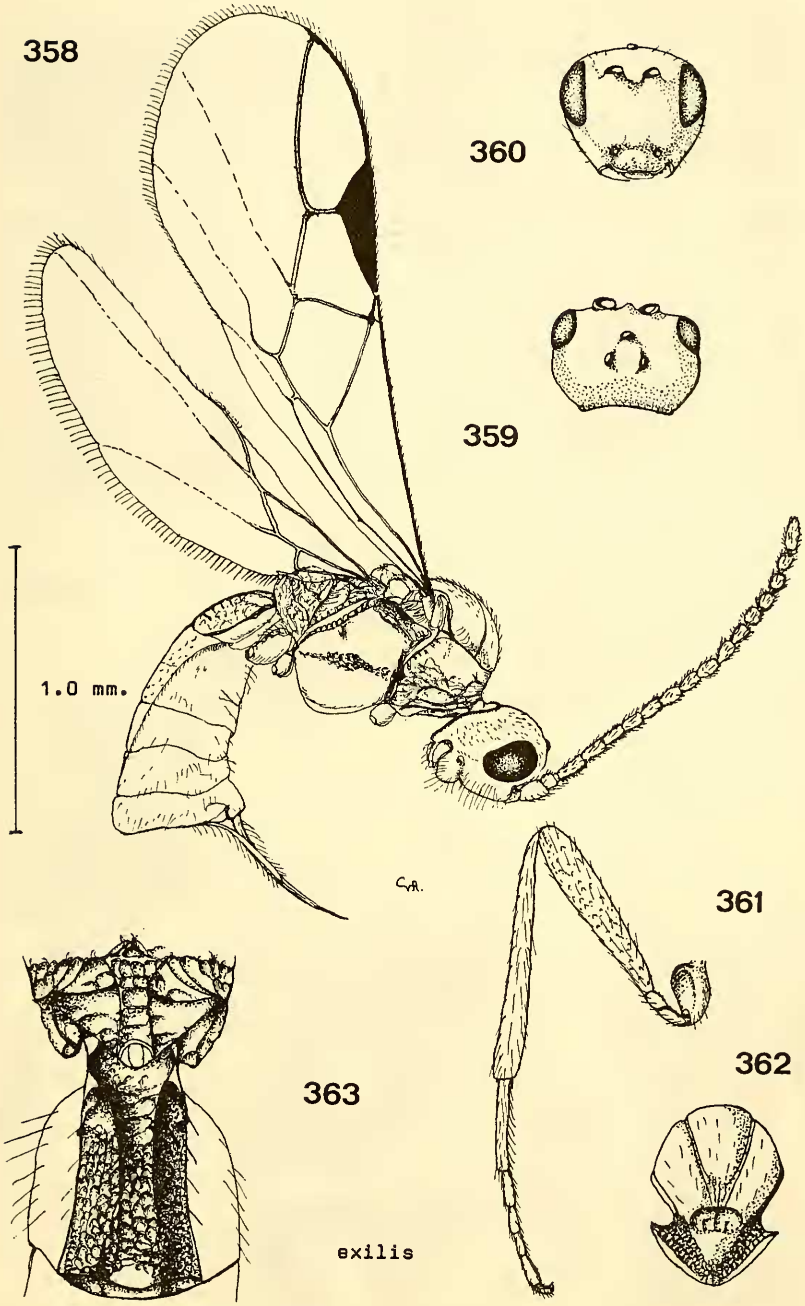

Fig. 358—363, *Blacus* (*Blacus*) *exilis* (Nees), Sioux City (Iowa). 358, habitus, hind leg, lateral aspect; 362, mesonotum, dorsal aspect; 363, propodeum (p.p.) and 1st tergite, dorsal aspect. 358: scale-line; 359—362: 1.2 × scale-line; 363: 2.5 × scale-line

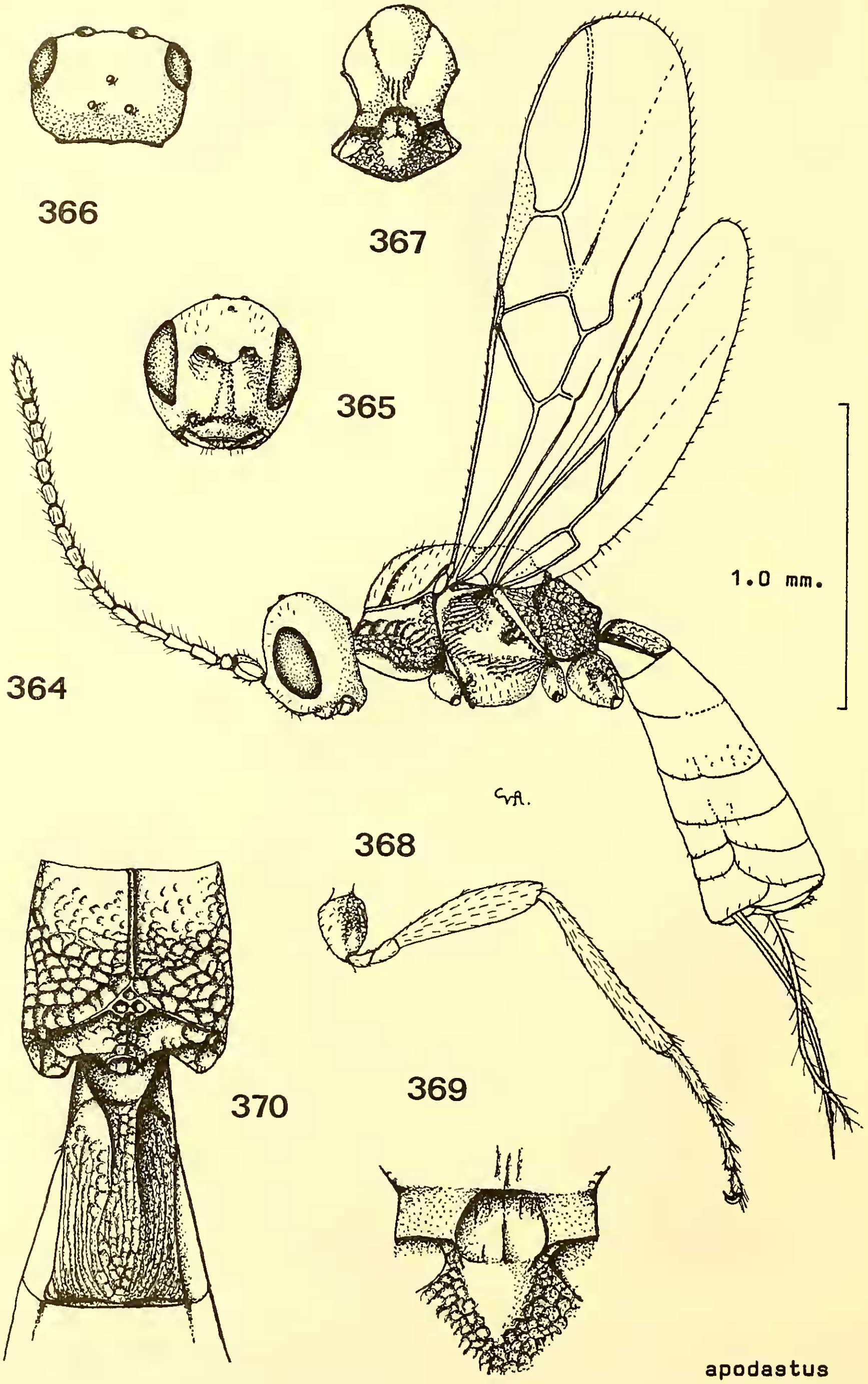

Fig. 364—370, *Blacus* (*Blacus*) *apodastus* spec. nov., holotype. 364, habitus, lateral aspect; 365, head, frontal aspect; 366, head, dorsal aspect; 367, mesonotum, dorsal aspect; 368, hind leg, lateral aspect; 369, detail of scutellum, dorsal aspect; 370, propodeum and 1st tergite, dorsal aspect. 364, 368: scale-line; 365—367: 1.2 × scale-line; 369: 3.0 × scale-line; 370: 2.5 × scale-line

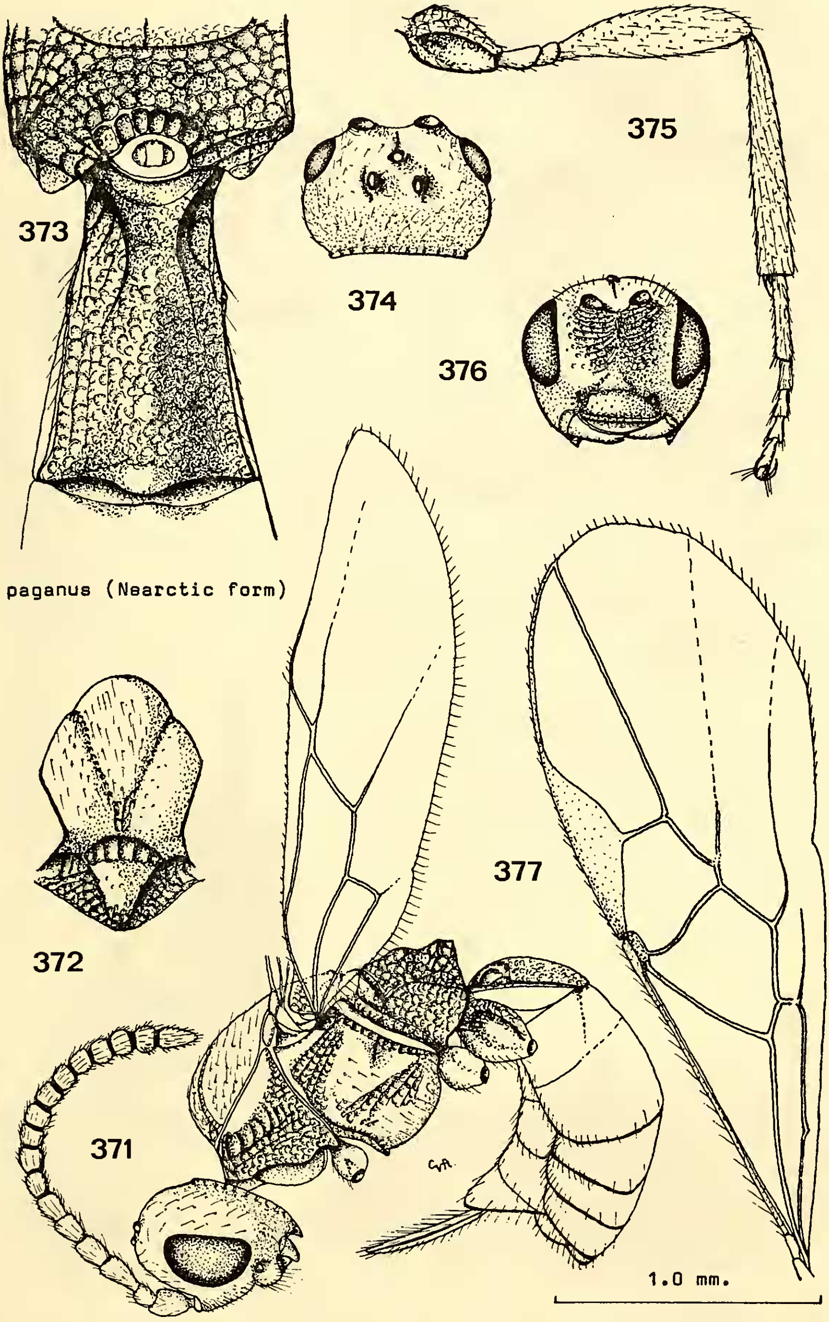

Fig. 371—377, *Blacus* (*Blacus*) *paganus* Haliday, Highlands (North Carolina). 371, habitus, lateral aspect; 372, mesonotum, dorsal aspect; 373, propodeum (p.p.) and 1st tergite, dorsal aspect; 374, head, dorsal aspect; 375, hind leg, lateral aspect; 376, head, frontal aspect; 377, fore wing. 371, 375, 377: scale-line; 372, 374, 376: 1.2 × scale-line; 373: 2.5 × scale-line

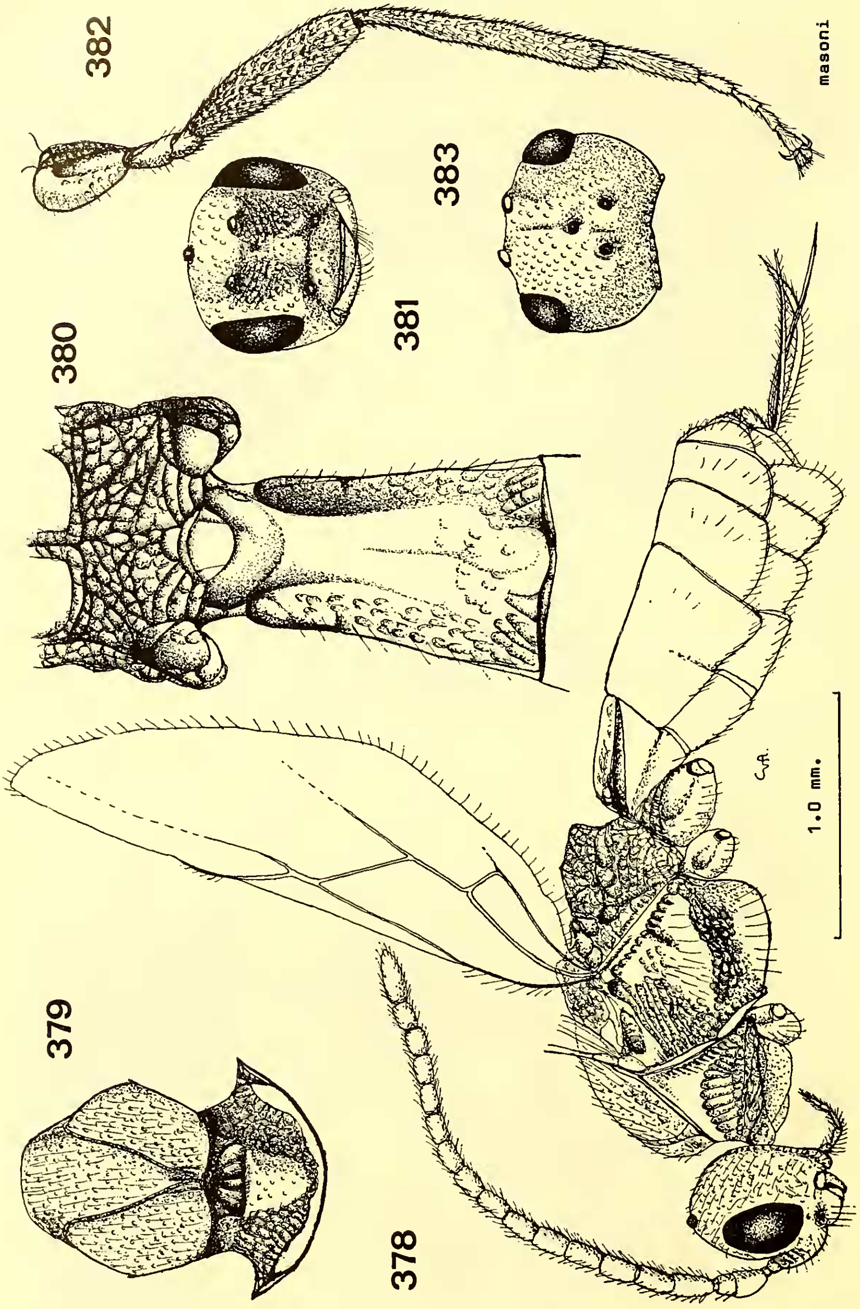

Fig. 378—383, *Blacus* (*Blacus*) *masoni* spec. nov., holotype. 378, habitus, lateral aspect; 379, mesonotum, dorsal aspect; 380, propodeum (p.p.) and 1st tergite; 381, head, frontal aspect; 382, hind leg, lateral aspect; 383, head, dorsal aspect. 378, 382: scale-line; 379, 381, 383: 1.2 × scale-line; 380: 2.5 × scale-line

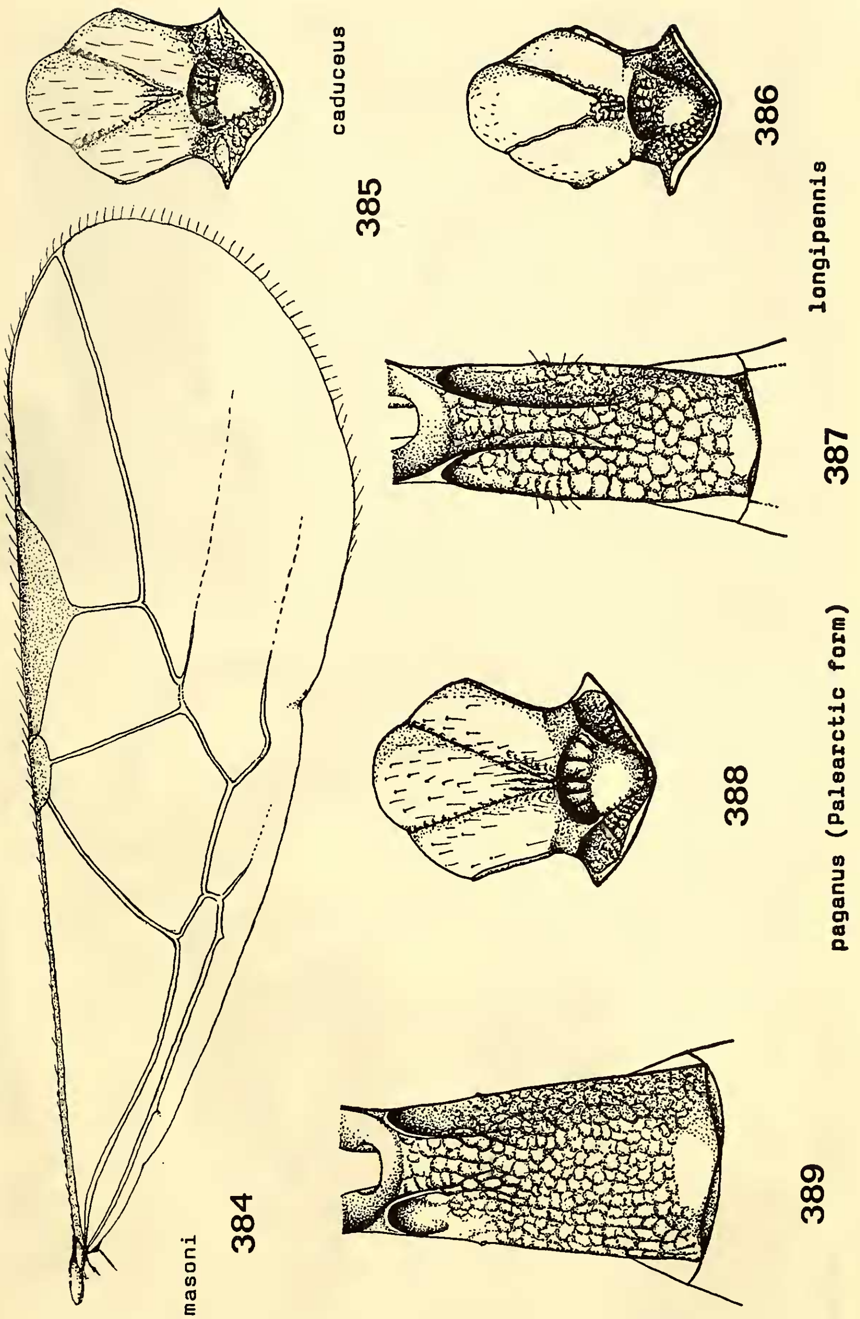

Fig. 384—389. 384, *Blacus* (*Blacus*) *masoni* spec. nov., holotype, fore wing; 385, *Blacus* (*B.*) *caduceus* spec. nov., ♀, partype, mesonotum, dorsal aspect; 386—387, *Blacus* (*B.*) *longipennis* (Gravenhorst), ♀, Waarder (Netherlands); 386, mesonotum, dorsal aspect; 387, 1st tergite, dorsal aspect; 388—389, *Blacus* (*B.*) *paganus* Haliday, ♀, Selva (Norway); 388, mesonotum, dorsal aspect; 389, 1st tergite, dorsal aspect. 384: as scale-line of Fig. 364; 385, 386, 388: 1.2 × this scale-line; 387, 389: 2.5 × this scale-line

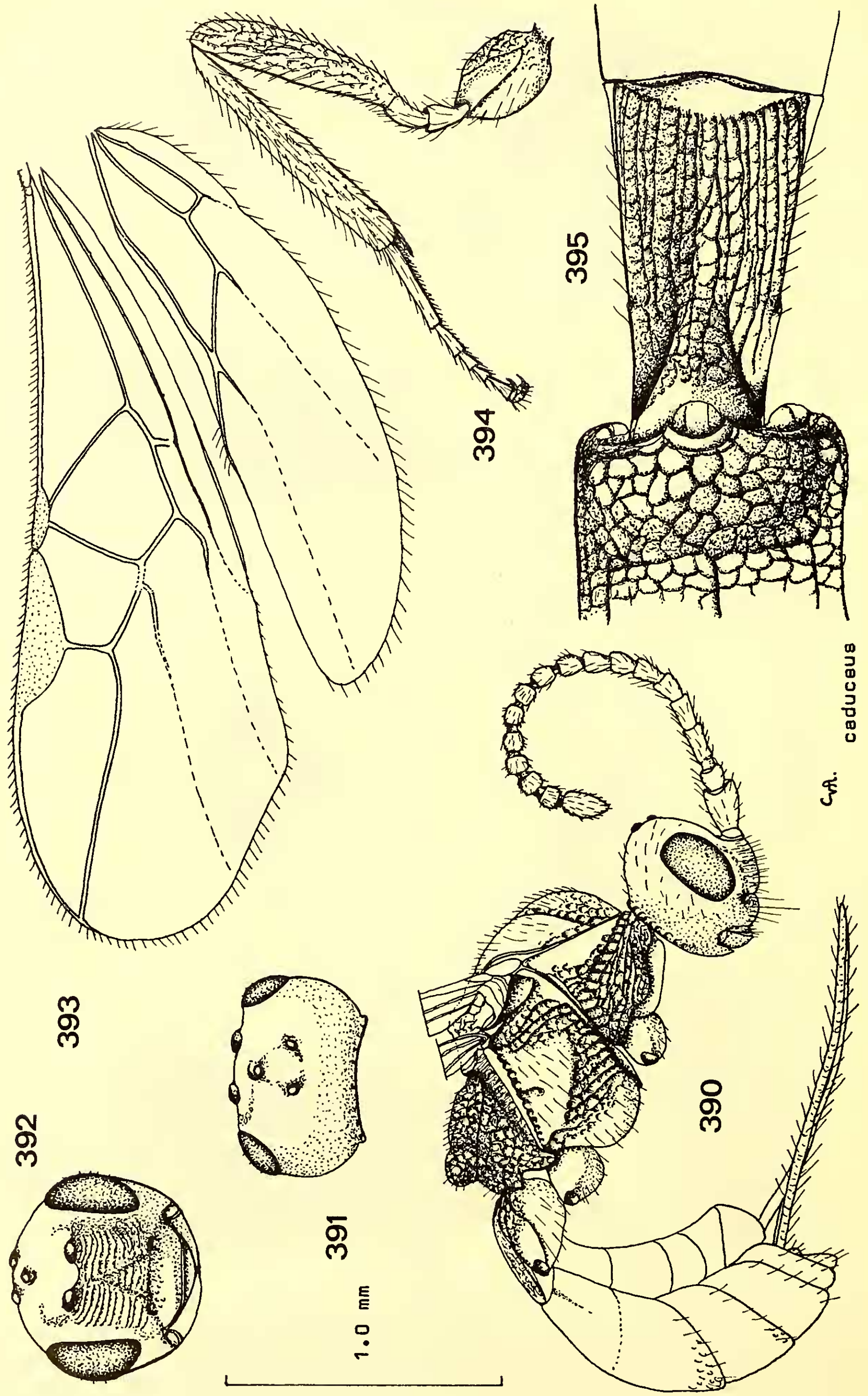

Fig. 390—395 (*Blacus* (*Blacus*) *caduceus* spec. nov., holotype. 390, habitus, lateral aspect; 391, head, dorsal aspect; 392, head, frontal aspect; 393, wings; 394, hind leg, lateral aspect; 395, propodeum (p.p.) and 1st tergite, dorsal aspect. 390, 393, 394: scale-line; 391, 392: 1.2 × scale-line; 395: 2.5 × scale-line

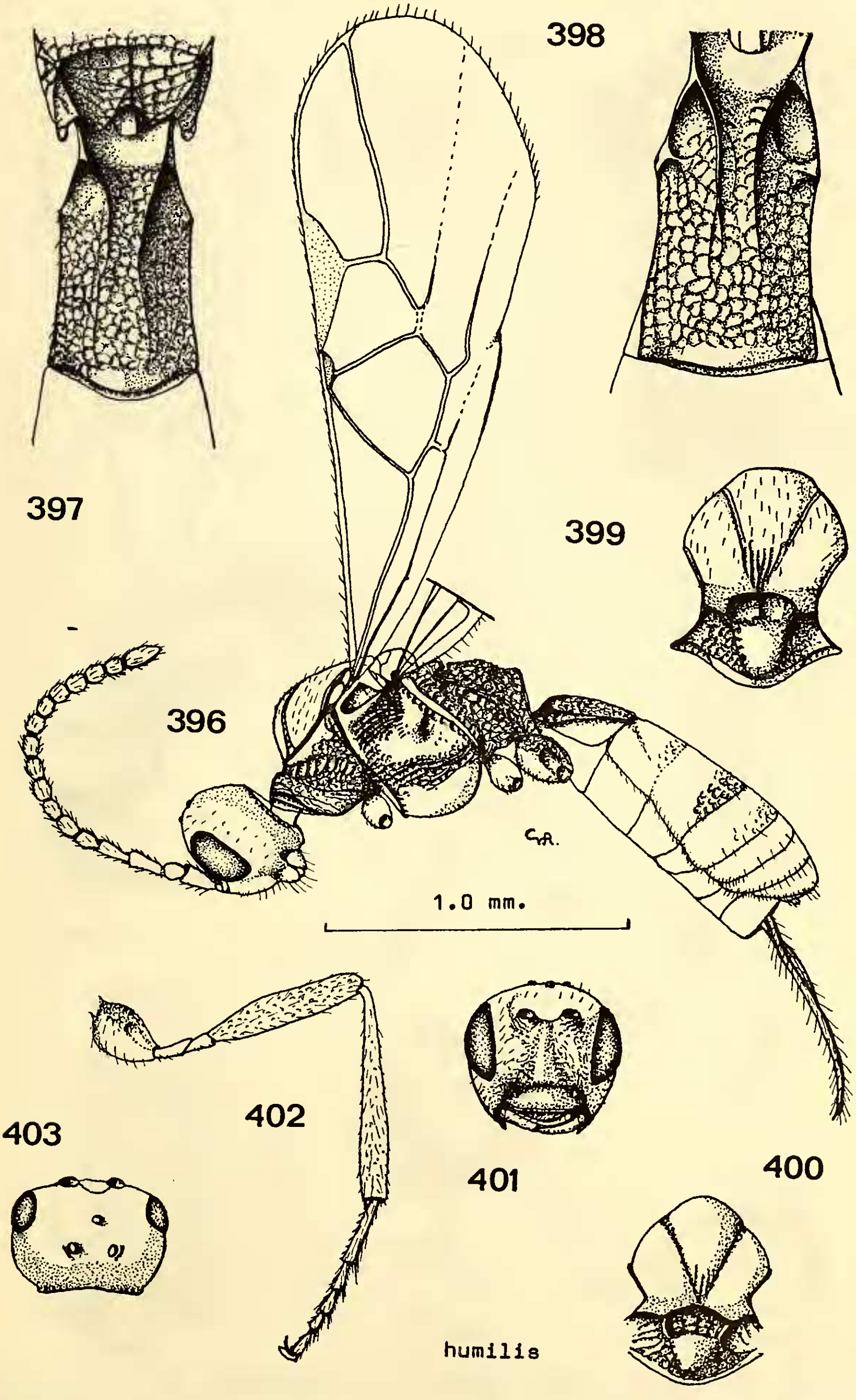

Fig. 396—403, *Blacus* (*Blacus*) *humilis* (Nees); 396, 397, 400—403, White Fox (Saskatchewan); 398, 399, ♀, Otterlose Bos (Netherlands). 396, habitus, lateral aspect; 397, propodeum (p.p.) and 1st tergite, dorsal aspect; 398, 1st tergite, dorsal aspect; 399, 400, mesonotum, dorsal aspect; 401, head, frontal aspect; 402, hind leg, lateral aspect; 403, head, dorsal aspect. 396, 402: scale-line; 397, 398: 2.5 × scale-line; 399—401, 403: 1.2 × scale-line

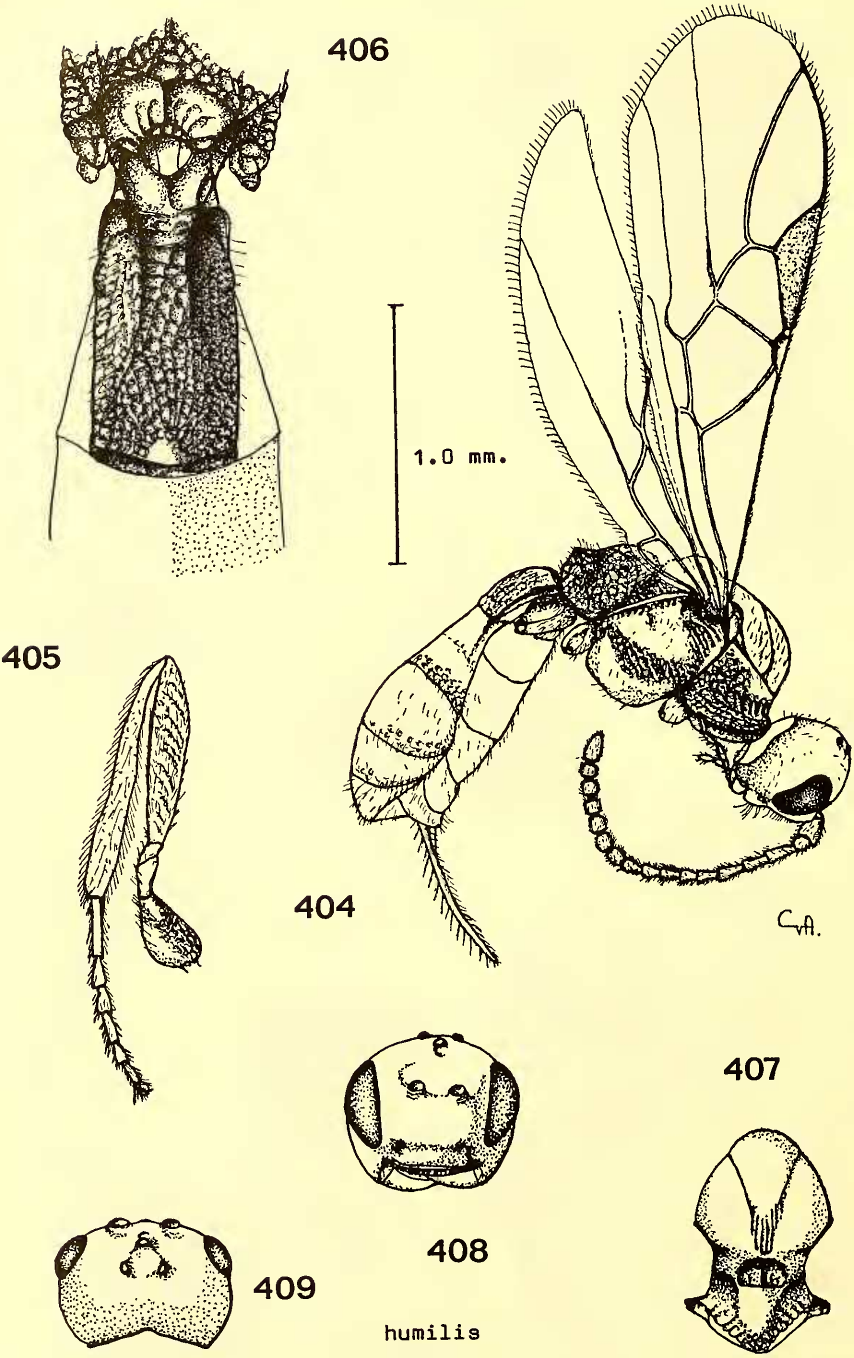

Fig. 404—409, *Blacus* (*Blacus*) *humilis* (Nees), slender form from Sta. Cruz (California). 404, habitus, lateral aspect; 405, hind leg, lateral aspect; 406, propodeum (p.p.) and 1st tergite; 407, mesonotum, dorsal aspect; 408, head, frontal aspect; 409, head, dorsal aspect. 404. 405: scale-line; 407—409: 1.3 × scale-line; 406: 2.8 × scale-line

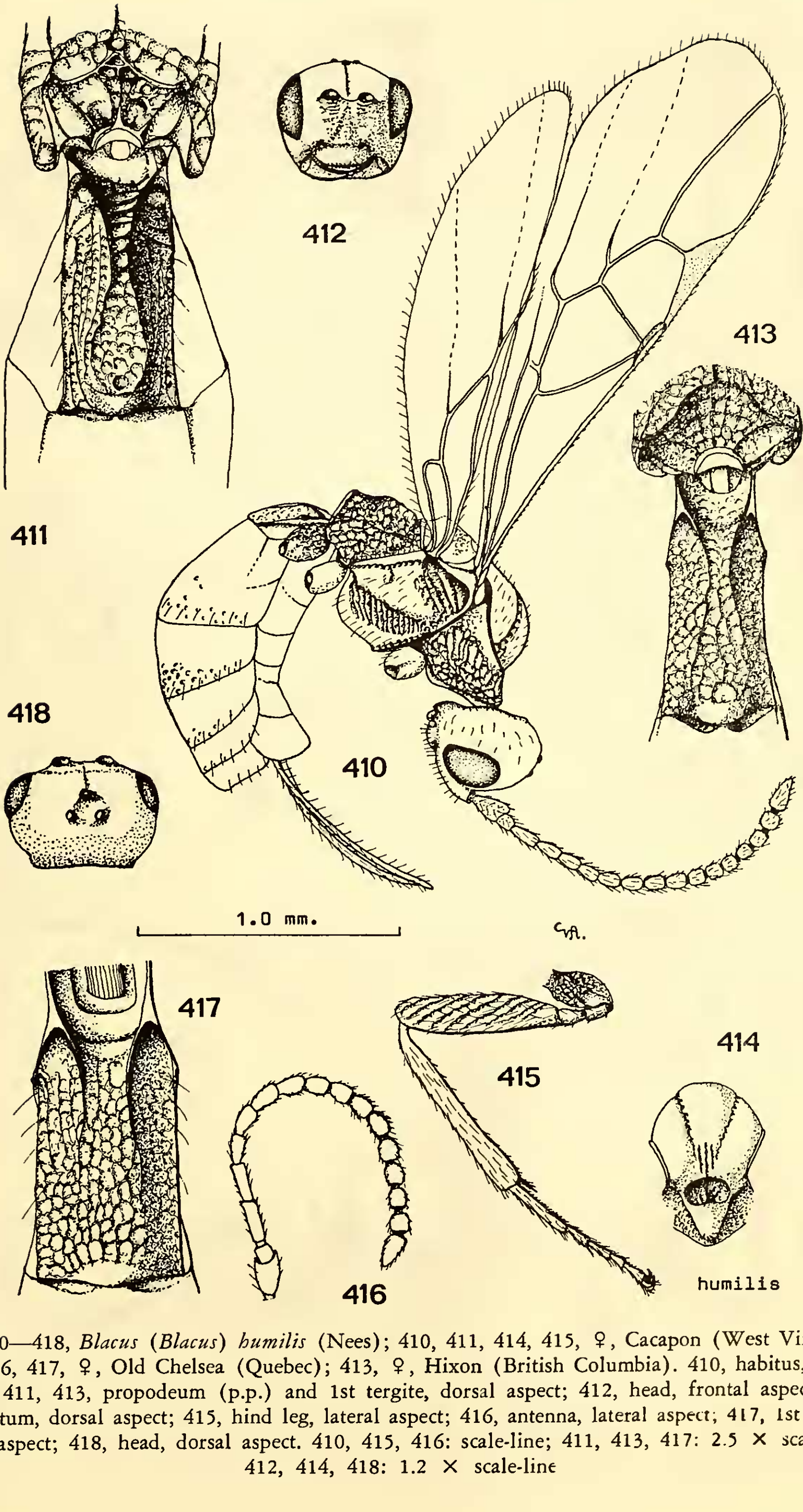

Fig. 410—418, *Blacus* (*Blacus*) *humilis* (Nees); 410, 411, 414, 415, ♀, Cacapon (West Virginia); 412, 416, 417, ♀, Old Chelsea (Quebec); 413, ♀, Hixon (British Columbia). 410, habitus, lateral aspect; 411, 413, propodeum (p.p.) and 1st tergite, dorsal aspect; 412, head, frontal aspect; 414, mesonotum, dorsal aspect; 415, hind leg, lateral aspect; 416, antenna, lateral aspect; 417, 1st tergite, dorsal aspect; 418, head, dorsal aspect. 410, 415, 416: scale-line; 411, 413, 417: 2.5 × scale-line; 412, 414, 418: 1.2 × scale-line

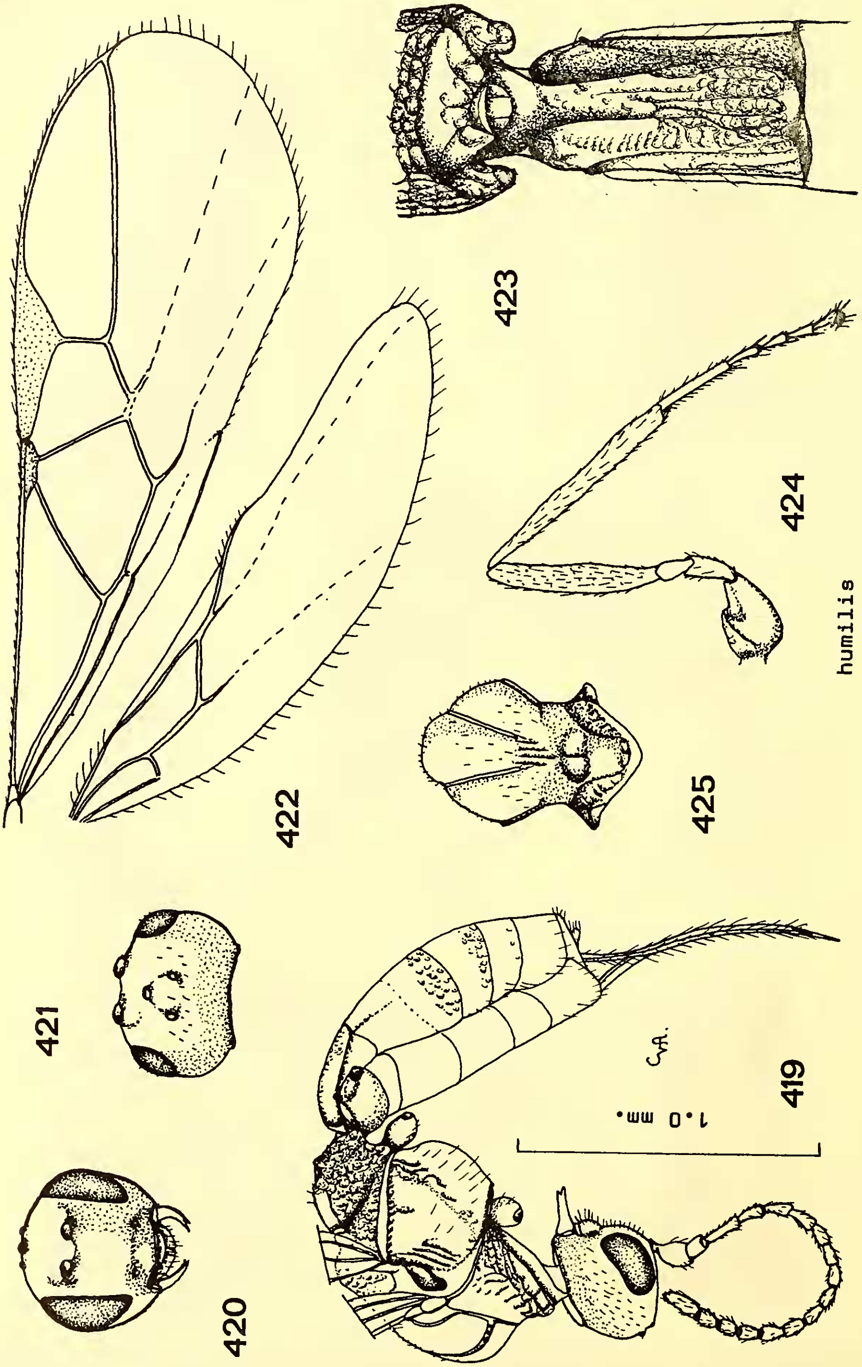

Fig. 419—425, *Blacus* (*Blacus*) *humilis* (Nees), slender form from Desierto Leones (Mexico). 419, habitus, lateral aspect; 420, head, frontal aspect; 421, head, dorsal aspect; 422, wings; 423, propodeum (p.p.) and 1st tergite, dorsal aspect; 424, hind leg, lateral aspect; 425, mesonotum, dorsal aspect. 419, 422, 424: scale-line; 420, 421, 425: 1.2 × scale-line; 423: 2.0 × scale-line

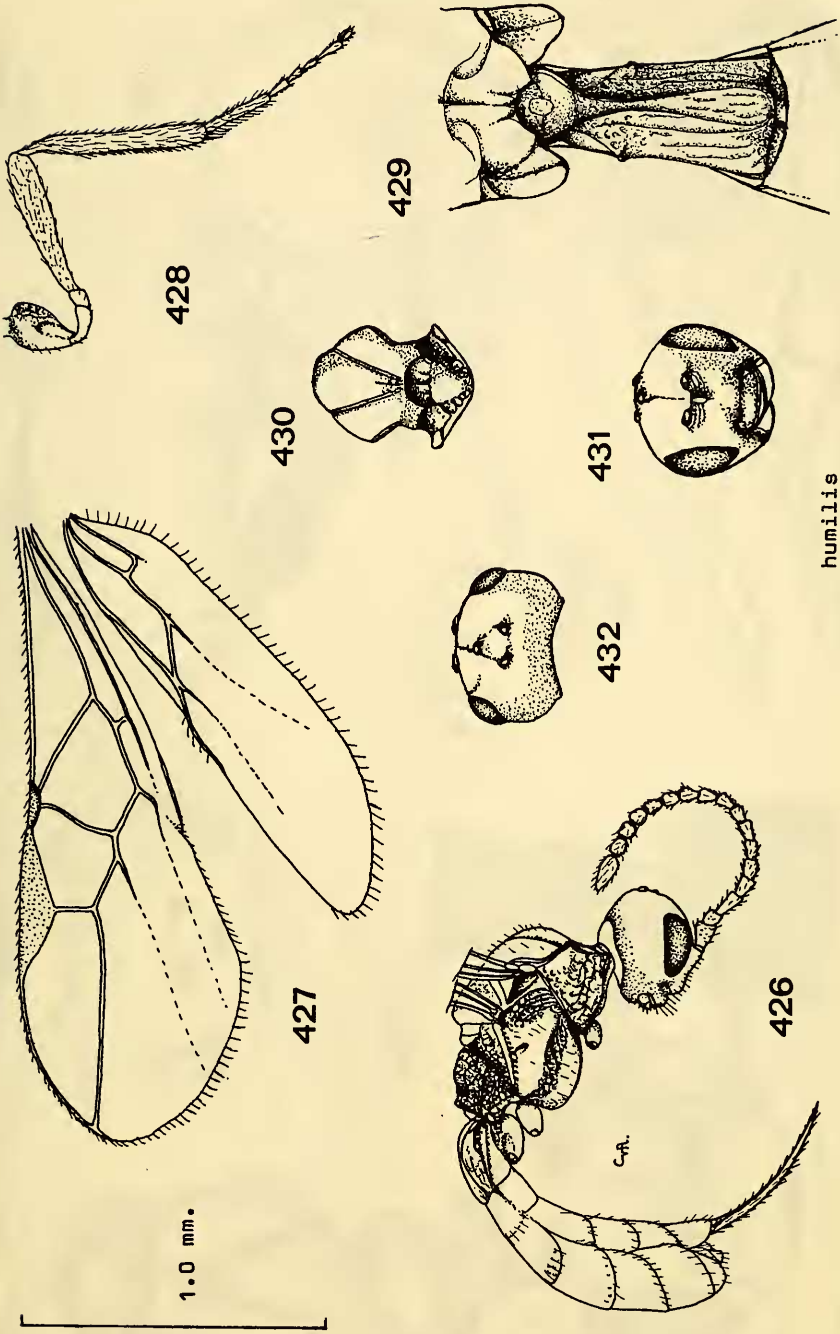

Fig. 426—432, *Blacus* (*Blacus*) *humilis* (Nees), small form from Cranberry Lake (New York). 426, habitus, lateral aspect; 427, wings; 428, hind leg, lateral aspect; 429, propodeum (p.p) and 1st tergite, dorsal aspect; 430, mesonotum, dorsal aspect; 431, head, frontal aspect; 432, head, dorsal aspect. 426, 428: scale-line; 430—432: 1.2 × scale-line; 429: 2.5 × scale-line

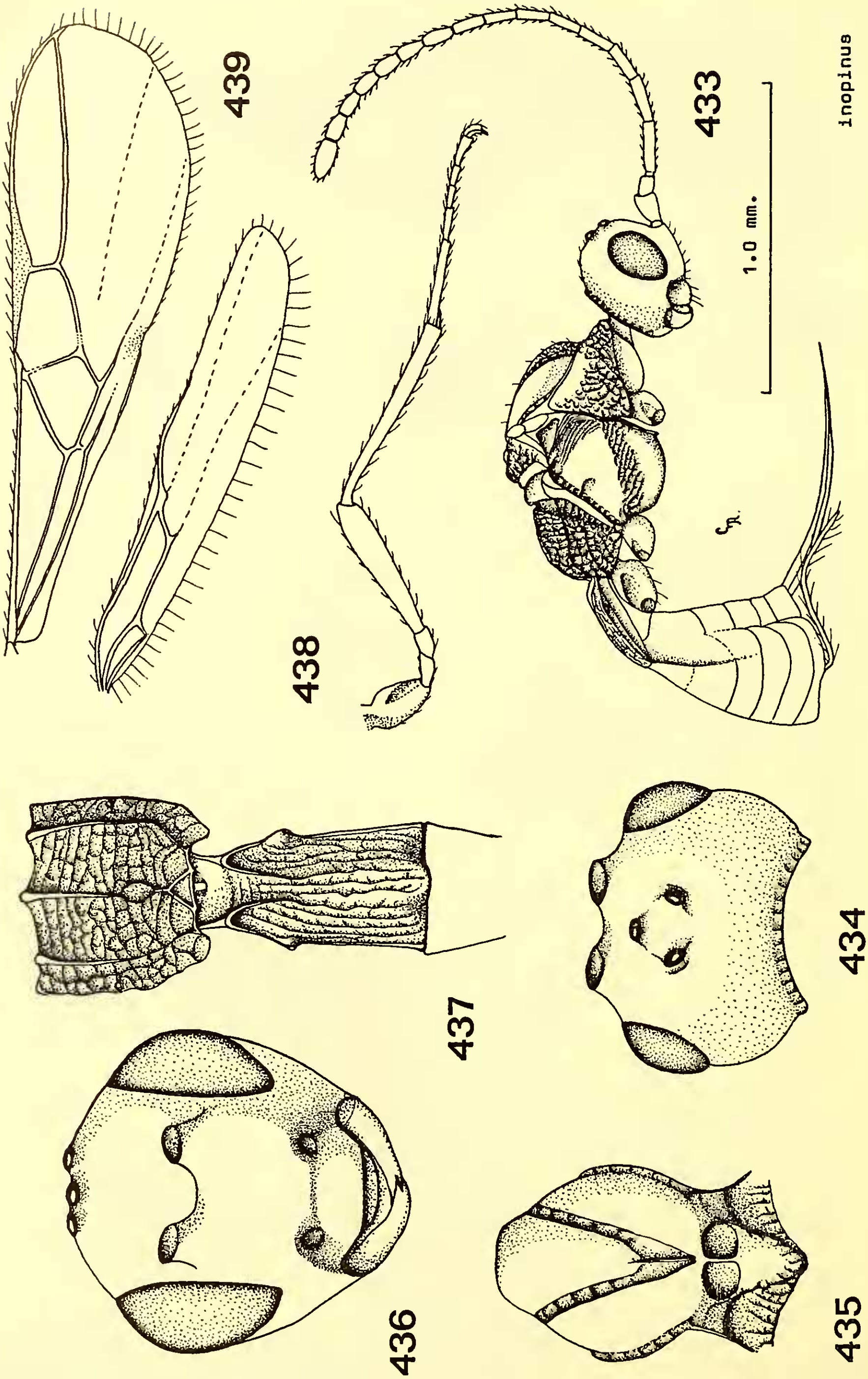

Fig. 433—439, *Blacus* (*Blacus*) *inopinus* spec. nov., holotype. 433, habitus, lateral aspect; 434, head, dorsal aspect; 435, mesonotum, dorsal aspect; 436, head, frontal aspect; 437, propodeum and 1st tergite; 438, hind leg, lateral aspect; 439, wings. 433, 438, 439: scale-line; 434, 435, 437: 2.1 × scale-line; 436: 2.5 × scale-line

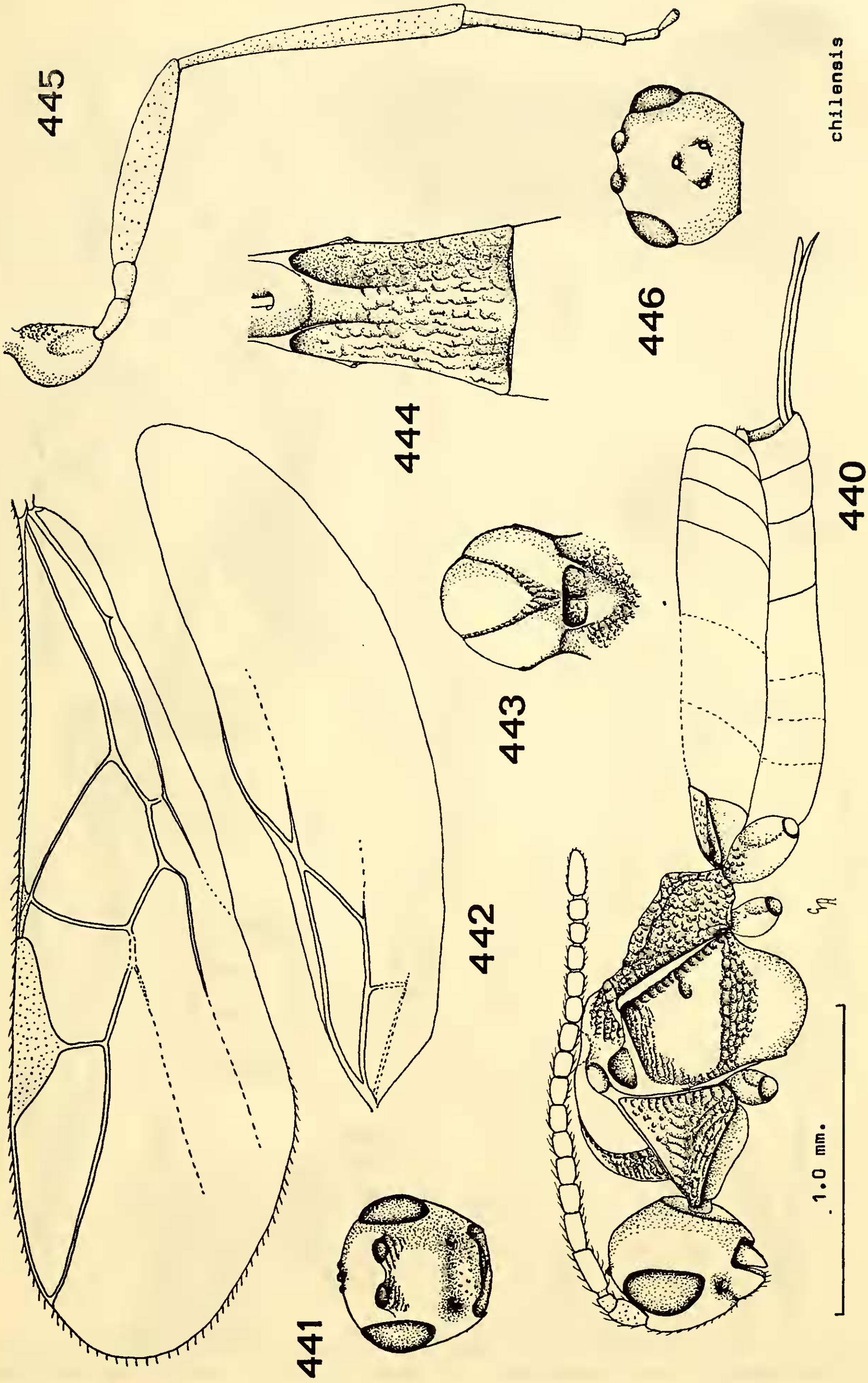

Fig. 440—446, *Blacus* (*Blacus*) *chilensis* spec. nov., holotype. 440, habitus, lateral aspect; 441, head, frontal aspect; 442, wings; 443, mesonotum, dorsal aspect; 444, 1st tergite, dorsal aspect; 445, hind leg, lateral aspect; 446, head, dorsal aspect. 440—443, 445, 446: scale-line; 444: 2.1 × scale-line

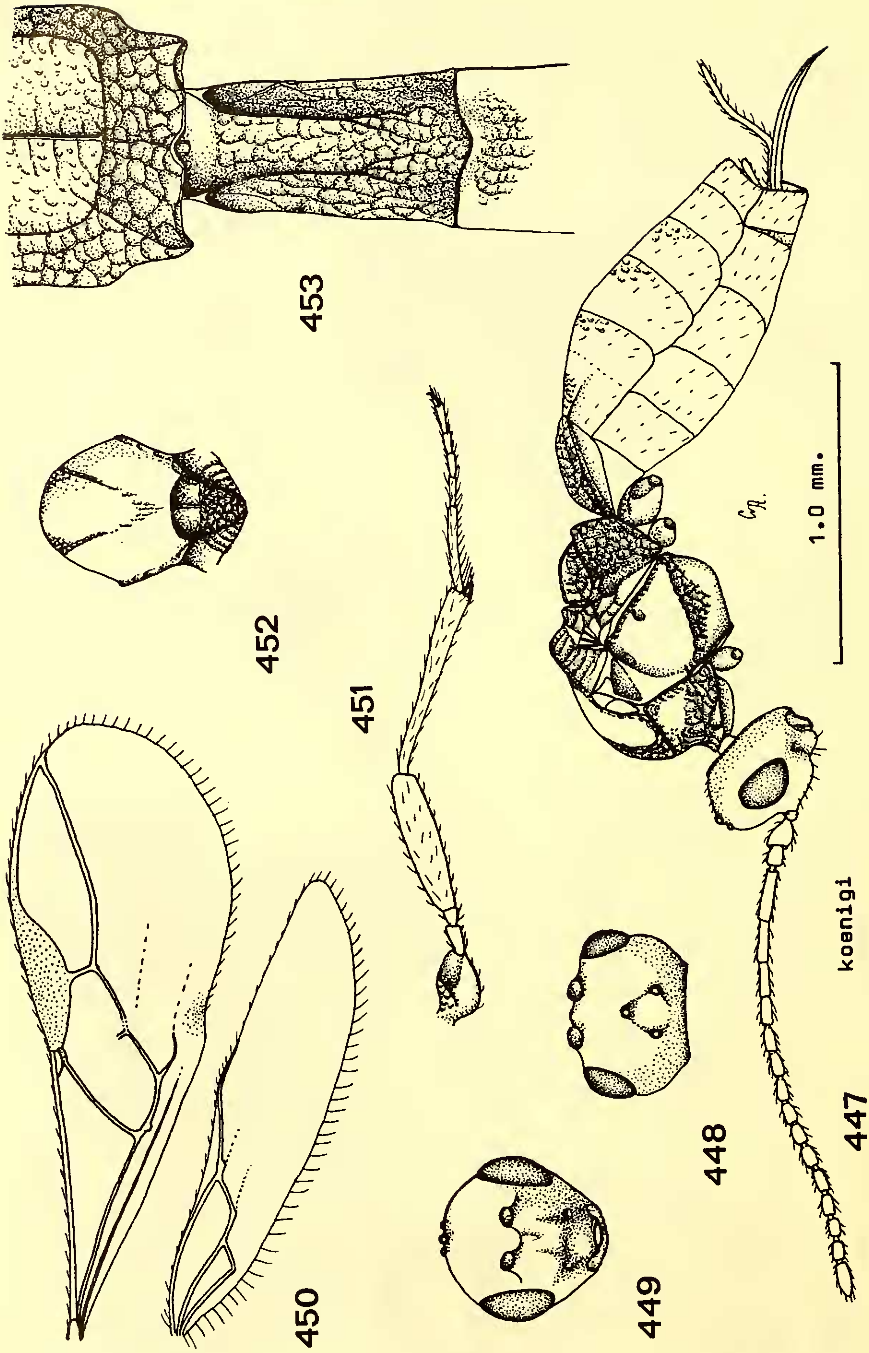

Fig. 447—453, *Neoblacus rufipes* Ashmead, neotype (= *koenigi*). 447, habitus, lateral aspect; 448, head, dorsal aspect; 449, head, frontal aspect; 450, wings; 451, hind leg, lateral aspect; 452, mesonotum, dorsal aspect; 453, propodeum, 1st and 2nd tergites, dorsal aspect. 447, 450, 451: scale-line; 448, 449, 452: 1.2 × scale-line; 453: 2.5 × scale-line

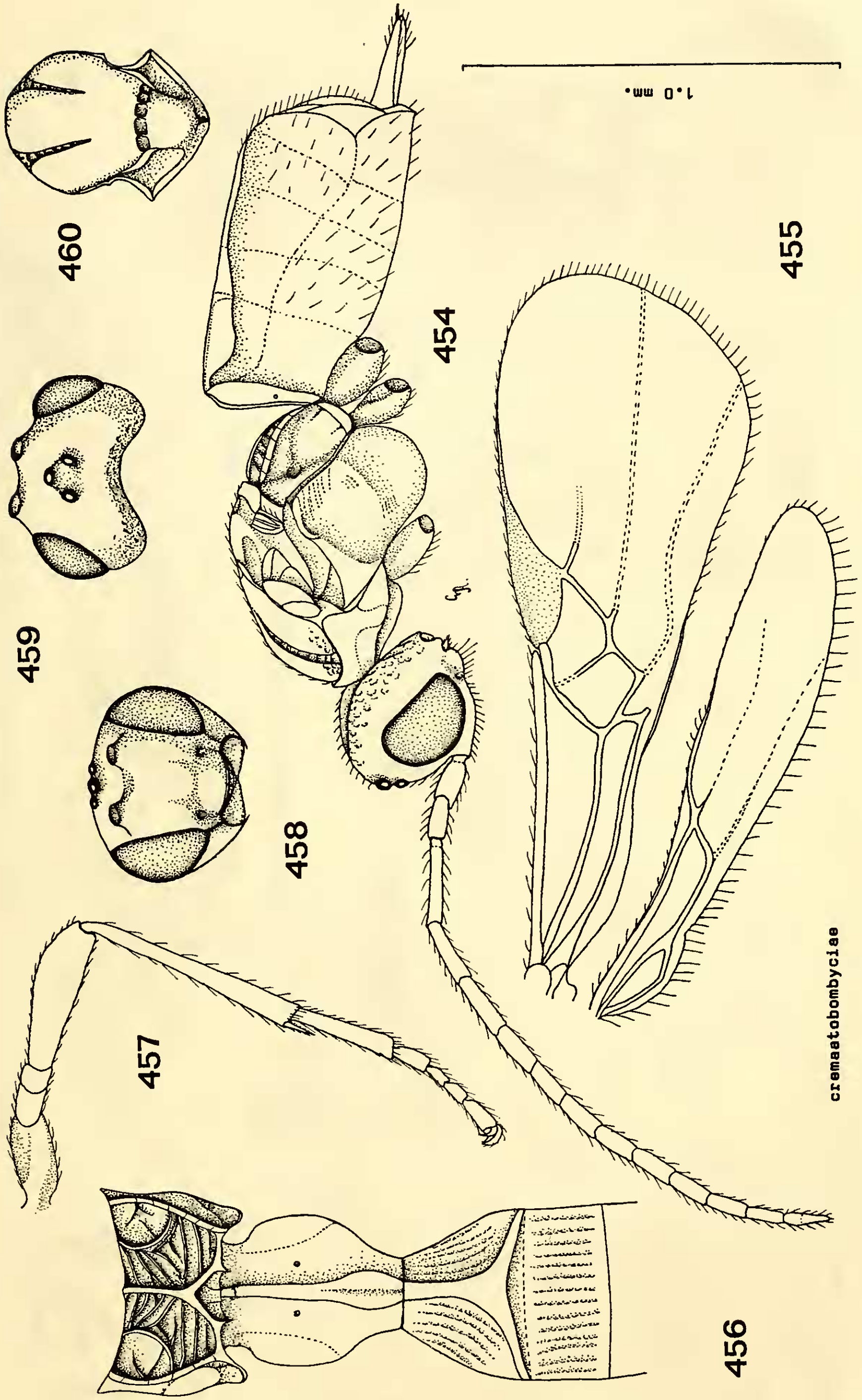

Fig. 454—460, *Mirax cremastobombyciae* (Fullaway), holotype. 454, habitus, lateral aspect; 455, hind leg, lateral aspect; 456, propodeum, 1st-3rd tergites, dorsal aspect; 457, hind leg, lateral aspect; 458, head, frontal aspect; 459, head, dorsal aspect; 460, mesonotum, dorsal aspect. 454, 455, 457—460: scale-line; 456: 1.5 × scale-line

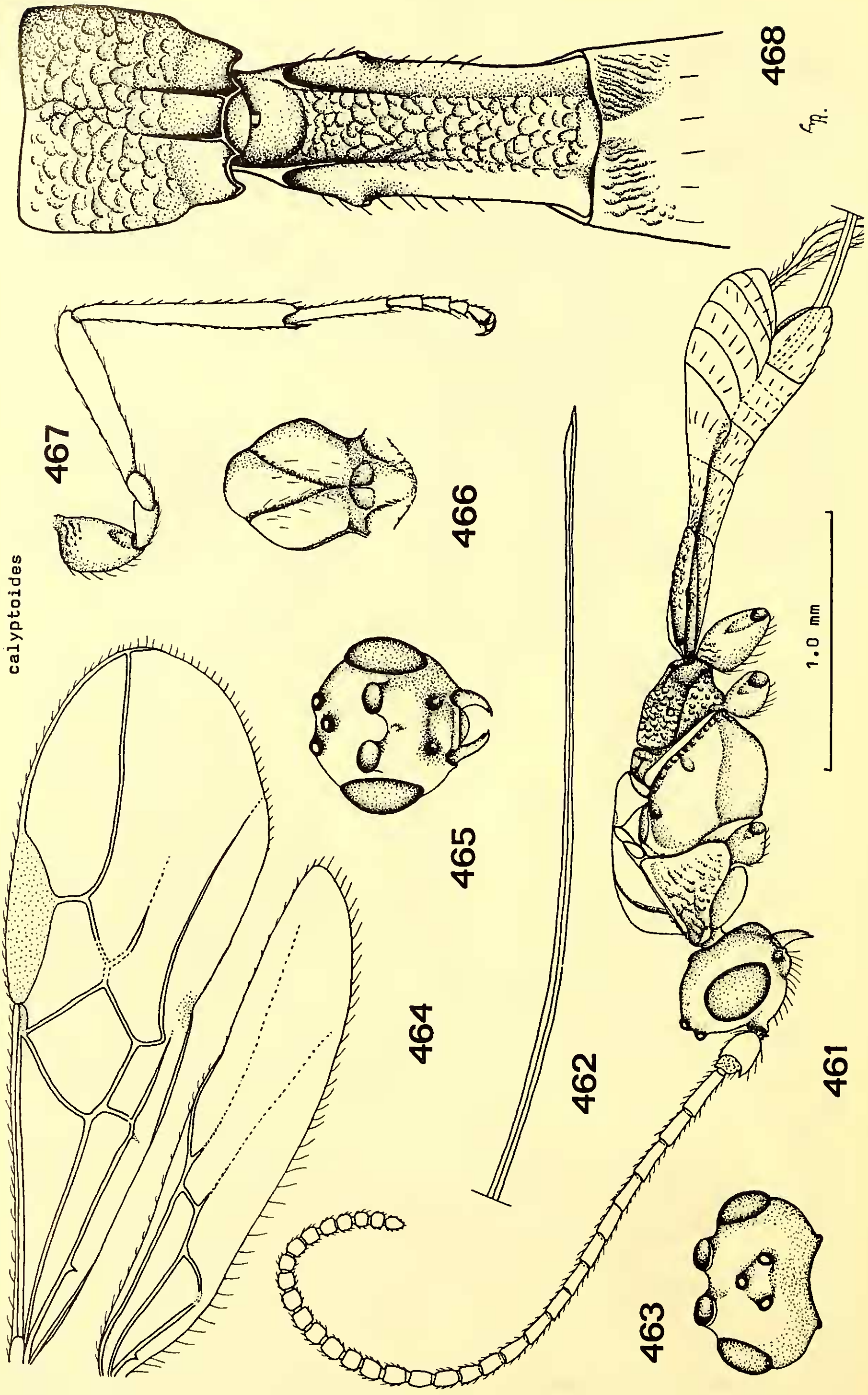

Fig. 461—468, *Stegnocella calyptoides* spec. nov., holotype. 461, habitus, lateral aspect; 462, ovipositor, lateral aspect; 463, head, dorsal aspect; 464, wings; 465, head, frontal aspect; 466, mesonotum, dorsal aspect; 467, hind leg, lateral aspect; 468, propodeum and 1st tergite, dorsal aspect. 461, 462, 464, 467: scale-line; 463, 465, 466: 1.2 × scale-line; 468: 2.5 × scale-line

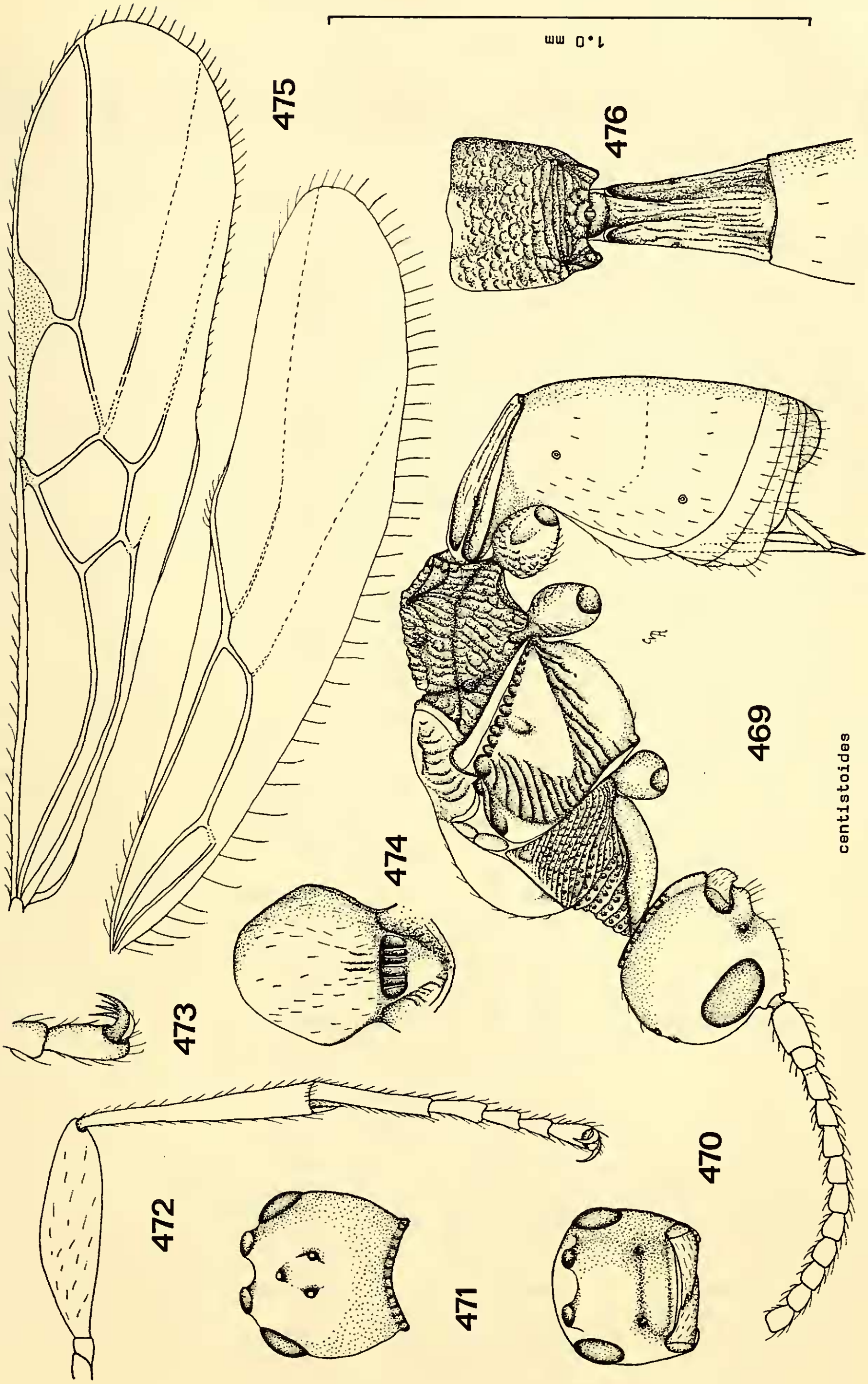

Fig. 469—476, *Apoblacus centistoides* spec. nov., holotype. 469, habitus, lateral aspect; 470, head, frontal aspect; 471, head, dorsal aspect; 472, hind leg, lateral aspect; 473, middle tarsal claw, lateral aspect; 474, mesonotum, dorsal aspect; 475, wings; 476, propodeum and 1st tergite, dorsal aspect. 469—472, 474, 475: scale-line; 473: 2.0 × scale-line; 476: 1.1 × scale-line

INDEX OF NAMES USED IN THE BLACINI

Pal. = Palaearctic; Nea. = Nearctic; Neo. = Neotropical; Eth. = Ethiopian; Ori. = Oriental; Pac. = Pacific; H = Holotype; L = Lectotype; N = Neotype. For the abbreviations of museums, etc. see the acknowledgements (p. 251).

Name	Type-locality	Type-location	Page
afflictus Curtis, 1837	nomen nudum	—	—
ambulans Haliday, 1835	Pal.: ?Ireland	?	212
andreei Brues, 1933	Pal.: Baltic Amber	lost	1)
annulicornis Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	190
apaches spec. nov.	Pal.: Nepal	BM; ♀,H	213
apicalis spec. nov.	Pal.: Nepal	BM; ♀,H	193
apodastus spec. nov.	Nea.: Ontario	CNC; ♀,H	234
aptenodytes Marshall, 1889	Pal.: England	BM; ♀,?L	220
armatulus Ruthe, 1861	Pal.: Germany	BM; ♀,L	204
artomandibularis spec. nov.	Pal.: Nepal	BM; ♀,H	194
asaphus spec. nov.	Nea.: Manitoba	CNC; ♀,H	229
ashmeadii (Brues, 1933)	Pal.: Baltic Amber	lost	1)
aulacis spec. nov.	Nea.: Mexico	CNC; ♀,H	181
barynoti (Boudier, 1834)	Pal.: France	?lost; ♂	250
bisstigmata (Say, 1836)	Nea.: Indiana	lost; ♂	203
bovistae Haeselbarth, 1973	Pal.: Switzerland	Genève; ♀,H	241
brachialis Rondani, 1876	Pal.: Italy	?lost	250
brevicornis Ruthe, 1861	Pal.: Germany	BM; ♀,L	238
caduceus spec. nov.	Nea.: West Virginia	USNM; ♀,H	237
calyptoides spec. nov.	Neo.: Chile	CNC; ♀,H	178
capeki Haeselbarth, 1973	Pal.: Czechoslovakia	Čapek Coll.; ♀,H	214
centistoides spec. nov.	Neo.: Chile	CNC; ♀,H	246
cerealis Curtis, 1860	Pal.: England	Melbourne; ♂,H	250
cerinus spec. nov.	Neo.: Brazil	BM; ♀,H	187
chilensis spec. nov.	Neo.: Chile	MCZ; ♀,H	243
chillcotti spec. nov.	Nea.: North Carolina	CNC; ♀,H	189
chinensis Watanabe, 1950	Pal.: China	?	250
cognatus spec. nov.	Nea.: Arizona	CNC; ♀,H	230
cohibilis spec. nov.	Nea.: Texas	CNC; ♀,H	228
collaris (Ashmead, 1894)	Nea.: St. Vincent	BM; ♀,H	208
compar Ruthe, 1861	Pal.: Germany	BM; ♀,L	212
compressiventris spec. nov.	Nea.: Quebec	CNC; ♀,H	182
conformis Wesmael, 1835	Pal.: Belgium	Brussels; ♂,L	214
constrictus spec. nov.	Neo.: Brazil	BM; ♀,H	188
convexus spec. nov.	Eth.: Madagascar	MAC; ♀,H	191
cracentis spec. nov.	Nea.: Mexico	CNC; ♀,H	201
crassicornis Brues, 1933	Pal.: Baltic Amber	lost	1)
crassicrus spec. nov.	Nea.: Mexico	CNC; ♀,H	228
cremastobombyciae Fullaway, 1956	Pac.: Hawaii	BPBM; ♀,H	248
cuneatus Provancher, 1888	Nea.: Quebec	belongs to *Orgilus*	
decaryi Granger, 1949	Eth.: Madagascar	MNHN; ♂,H	191
defectuosus Provancher, 1886	Nea.: Ontario	PC; ♀,H	231
dentatus Hellén, 1958	Pal.: Finland	Helsinki; ♀,H	203
dilaticornis spec. nov.	Neo.: Brazil	BM; ♀,H	206
diversicornis (Nees, 1834)	Pal.: Germany	lost	212
dracomontanus Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	210
dubius Ruthe, 1861	Pal.: ?Germany	BM; ♂,L	242
epitolus spec. nov.	Neo.: Brazil	BM; ♀,H	209

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1) Will be dealt with in a second paper.

errans (Nees, 1812)	Pal.: Germany	lost	241
erugatus spec. nov.	Neo.: Equador	CNC; ♀,H	190
exilis (Nees, 1812)	Pal.: Germany	Berlin; ♀,N	233
exocentri Giraud, 1877	nomen nudum	—	—
facialis Brues, 1933	Pal.: Baltic Amber	lost	1)
filicornis Haeselbarth, 1973	Pal.: Germany	HC; ♀,H	240
fischeri Haeselbarth, 1973	Pal.: Austria	NMW; ♀,H	183
fissus spec. nov.	Neo.: Brazil	BM; ♀,H	202
floreus Rondani, 1878	?=*florus* Goureau	—	—
florus Goureau, 1851	Pal.: France	!lost	251
forticornis Haeselbarth, 1973	Pal.: England	BM; ♀,H	242
fritschii Brues, 1933	Pal.: Baltic Amber	lost	1)
fulvicollis Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	184
fuscipes Goureau, 1862	Pal.: France	?lost	251
gelechiae Ashmead, 1889	Nea.: Missouri	belongs to *Orgilus*	
genalis Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	210
gibber Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	192
glabrum spec. nov.	Pal.: Nepal	BM; ♀,H	196
gracilicornis Brues, 1939	Pal.: Baltic Amber	Cambridge; ♀,H	1)
gracilis Brues, 1908	Nea.: Minnesota	belongs to *Orgilus*	
gracilis Haeselbarth, 1973 2)	Pal.: Germany	HC; ♀,H	185
grandior Brues, 1933	Pal.: Baltic Amber	lost	1)
haeselbarthi spec. nov.	Eth.: Tanzania	MAC; ♀,H	210
hastatus Haliday, 1835	Pal.: England	?	240
humillimus Dalla Torre, 1898	Neo.: Chile	?lost	251
humilis (Nees, 1812)	Pal.: Germany	München; ♀,N	235
hostilis Haeselbarth, 1973	Pal.: Germany	Berlin; ♀,H	241
impennis Curtis, 1837	nomen nudum	—	—
inopinus spec. nov.	Eth.: Zaïre	Stam Coll.: ♀,H	242
instabilis Ruthe, 1861	Pal.: Germany	BM; ♀,L	240
interstitialis Ruthe, 1861	Pal.: Germany	BM; ♀,L	239
javensis spec. nov.	Ori.: Java	BM; ♀,H	184
kaszabi Haeselbarth, 1973	Pal.: Mongolia	TMA; ♀,H	212
koenigi Fischer, 1966	Pal.: Austria	NMW; ♀,H	244
koenigsmanni Haeselbarth, 1973	Pal.: Austria	NMW; ♀,H	212
lactucaphis (Fitch, 1855)	Nea.: New York	USNM; ♂,H	232
leptostigma Ruthe, 1861	Pal.: Germany	BM; ♂,L	240
lithocolletides Ashmead, 1910	nomen nudum	—	—
longicaudus Provancher, 1886	Nea.: Ontario	PC; ♀,H	249
longicornis (Brues, 1933)	Pal.: Baltic Amber	lost	1)
longipennis (Gravenhorst, 1809)	Pal.: Germany	Berlin; ♀,N	242
maculipes Wesmael, 1835	Pal.: Belgium	Brussels; ♀,L	212
macropterus Haeselbarth, 1973	Pal.: Germany	HC; ♀,H	212
mallochi (Viereck, 1913)	Nea.: Virginia	USNM; ♀,H	217
mamillanus Ruthe, 1861	Pal.: Germany	BM; ♀,L	220
maryi Hellén, 1958	Pal.: Finland	Helsinki; ♀,H	227
masoni spec. nov.	Nea.: Quebec	CNC; ♀,H	235
mischocytus spec. nov.	Ori.: Java	BM; ♀,H	214
modestus Haeselbarth, 1973	Pal.: Germany	HC; ♀,H	241
monostigmaticus spec. nov.	Neo.: Chile	CNC; ♀,H	180
multiarticulatiformis Shenefelt, 1969	Pal.: Baltic Amber	lost	1)
multiarticulatus Ratzeburg, 1852	Pal.: Germany	belongs to *Pygostolus*	
nanulus Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	192
nanus Ashmead in Nason, 1905	nomen nudum	—	233
natalensis Brues, 1926	Eth.: S. Africa	Durban; ♀,H	250
nidicola Hedqvist, 1974	Pal.: Sweden	Hedqvist Coll.: ♀,H	226

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2) Will be renamed by Haeselbarth.

nigricornis Haeselbarth, 1973	Pal.: Austria	HC; ♀,H	241
nitidus Haeselbarth, 1973	Pal.: Italy	HC; ♀,H	213
nixoni Haeselbarth, 1973	Pal.: Cyprus	BM; ♀,H	211
oscinellae Fischer, 1963	Pal.: Czechoslovakia	Genève; ♀,H	239
otiorhynchi (Boudier, 1834)	Pal.: France	belongs to *Pygostolus* [3]	
paganus Haliday, 1835	Pal.: ?Ireland	?	238
pallens Hedwig, 1957	Pal.: Iran	belongs to Braconinae	
pallidipes Dalla Torre, 1898	emendation of *pallipes* (Foerster, 1862)		233
pallipes Haliday, 1835	Pal.: ?Ireland	?	213
pallipes Foerster, 1862	Pal.: Germany	Berlin; ♀,L	233
pappianus Haeselbarth, 1973	Pal.: Hungary	TMA; ♀,H	240
parvus Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	184
patulus spec. nov.	Nea.: British Columbia	CNC; ♀,H	219
pectinatus Haeselbarth, 1973	Pal.: Austria	NMW; ♀,H	214
petiolatus Haeselbarth, 1973	nomen nudum		
procerus Haeselbarth, 1973	Pal.: Kasachstan	Leningrad; ♀,H	241
propallipes Shenefelt, 1969	new name for *pallipes* (Foerster, 1862)		233
psichora spec. nov.	Neo.: Argentina	MCZ; ♀,H	176
pulcher Szépligeti, 1905	Ori.: Singapore	TMA; ♂,H	250
radialis Haeselbarth, 1973	Pal.: Kasachstan	Leningrad; ♀,H	241
redactus spec. nov.	Nea.: Michigan	SC; ♀,H	218
robustus Haeselbarth, 1973	Pal.: Czechoslovakia	Čapek Coll.: ♀,H	220
rubriceps Ashmead, 1894	Nea.: St. Vincent	BM; ♂,H	250
rufescens Ruthe, 1861	Pal.: Germany	BM; ♂,L	239
ruficornis (Nees, 1812)	Pal.: Germany	lost	203
rufipes (Ashmead, 1889)	Nea.: Indiana	USNM; ♀,H	232
rufipes (Ashmead, 1900)	Nea.: Ontario	CNC; ♀,N	244
schimitscheki Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	192
schwenkei Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	193
scitus Curtis, 1837	nomen nudum	—	—
sollicitis Curtis, 1837	nomen nudum	—	—
spinarius spec. nov.	Neo.: Brazil	CNC; ♀,H	247
spinifer Thomson, 1892	Pal.: Sweden	Lund; ♀,H	239
stami spec. nov.	Eth.: Zaïre	Stam Coll.: ♀,H	215
stelfoxi Haeselbarth, 1973	Pal.: England	BM; ♀,H	241
striatus spec. nov.	Nea.: Nova Scotia	CNC; ♀,H	207
strictus Curtis, 1837	nomen nudum	—	—
strictus Stelfox, 1941	Pal.: Ireland	Dublin; ♀,H	211
suberivorae Fulmek, 1962	nomen nudum	—	—
subquadratus Papp, 1971	Pal.: Mongolia	TMA; ♀,H	240
terebrator Ruthe, 1861	Pal.: Germany	BM; ♂,L	239
thoracicus spec. nov.	Nea.: Mexico	CNC; ♀,H	205
tobiae Haeselbarth, 1973	Pal.: Kasachstan	Leningrad; ♀,H	240
townesi Haeselbarth, 1974	Eth.: S. Africa	HC; ♀,H	193
transversus spec. nov.	Eth.: Madagascar	MAC; ♀.H	192
trapezoides spec. nov.	Nea.: Mexico	CNC; ♀,H	218
tricuspidatus (Kirchner, 1867)	nomen nudum	—	—
tripudians Haliday, 1835	Pal.: Ireland	?	212
trivialis Haliday, 1835	Pal.: ?Ireland	?	235
tuberculatus Wesmael, 1835	Pal.: Belgium	Brussels; ♀,L	213
vagans Ruthe, 1861	Pal.: ?Germany	?BM	241
varius Haeselbarth, 1973	Pal.: Germany	HC; ♀,H	211
wesmaeli Ruthe, 1861	Pal.: ?	?	251

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[3] See Haeselbarth, 1971.